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VOL. II.—31ST YEAR. SYDNEY, SATURDAY, SEPTEMBER 23, 1944. No. 13.

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THE CONTROL OF TUBERCULOSIS.[1]

By DOUGLAS ANDERSON, M.D.,
Honorary Assistant Physician, the Royal North Shore Hospital of Sydney.

THE control of tuberculosis is an evergreen subject for discussion, and one which possesses topical interest for everyone in this country at the present time, when we see around us so many people suffering from tuberculosis, so many families afflicted by it, who are unable to obtain the treatment and the relief of which they stand urgently in need. The subject is also an admirable vehicle to enable me to illustrate in this inaugural address to the section the nature and the scope of sociological medicine.

It is the object of this section to study the laws, manners and customs of society in the light of medical knowledge, in order to seek ways to improve the public health and the treatment of disease. That all you medical men and women should form yourselves into a group with such an object is a sign of the times; it is a sign of a reaction, which is taking place all over the world, to the wonderful advances which the present century has seen in purely scientific medicine. The advances in scientific medicine have tended to turn sick men and women into so many medical and surgical cases or even series of cases. This is an advantage up to a point; but no one should ever think himself imbued with the true spirit of medicine if he should forget for a moment that these medical and surgical "cases" are men and women still.

Tuberculosis sixty years or so ago was regarded in much the same way as medical science still regards the neuroses and psychoneuroses, as an hereditary taint or as an effect of a morbid constitution or diathesis. The word "consumptive" had a meaning as hopeless as the word "neurotic" still has to many people. The discovery of the tubercle bacillus and of the infective nature of the disease produced a revolution of thought and a great burst of energy to exploit the new idea. The birth of immunology and the preparation of tuberculin soon followed, and they provided a means of early diagnosis and brought great hopes of a specific cure. A little later the application of the X rays wonderfully improved our knowledge of the disease in the living. Hæmatology added to this knowledge. A great new principle of treatment has been discovered, too; the evolution of the form of treatment known as collapse therapy brought a lifeline to many a desperate battler caught in the undertow of tuberculosis. Is it to be wondered at that the medical mind has been full of these discoveries, and that often we may not have seen the wood for the trees—or rather, have not seen the patients for the cases?

I do not say that our knowledge of the sociology of tuberculosis has ever lapsed or that the general practitioners of medicine have been blind to it or that we must rediscover it. What I do say is that the specialist physicians and the medical staffs of tuberculosis institutions and public hospitals and the teachers of students have drawn heavily on the new science and have often been preoccupied with the new technicalities, while the wider ætiology and the humanistic side of the disease have taken second place. The rising generation of doctors is being taught to rely on specific objective tests and to believe in the potency of certain treatments aimed at attacking established disease; but they receive but a vague appreciation of the fact that once tuberculosis is in the system, the balance between its potential progressiveness and the sufferer's resistance is often and even usually tilted one way or the other by social, domestic or industrial factors—by fatigue, by sense of insecurity, by unhappiness or by dietary insufficiency. How many of those who teach the rising generation have any close acquaintance with the conditions under which the tuberculous patients who come to the hospital live, work and die? How many insist on their cardinal importance?

[1] The inaugural address delivered to the Section of Sociological Medicine of the New South Wales Branch of the British Medical Association on April 19, 1944.

THE INCIDENCE OF TUBERCULOSIS.

It is a good beginning to a discussion of the control of tuberculosis to ask just how widespread is the disease among us. Statistically speaking, we are much better off in this country than the people of England or of any of the European countries or most of the United States of America. The mortality rate from tuberculosis in Australia in 1938 was 37 per 100,000 of the population, whereas in New Zealand it was 40, in the United States 47, in Canada 51, in England 64, in Germany 73, in Eire 113, in Finland 210. In 1938 I made a survey by means of the tuberculin test to determine the incidence of tuberculosis infection (as distinct from tuberculous disease) among the people of Sydney and found that this was also relatively low; almost one-fifth of the urban population were still non-reactors to tuberculin at the age of forty years. Furthermore, it is my distinct impression, and it is shared by several of my colleagues who have studied abroad, that the expectation of life of persons found to be suffering from pulmonary tuberculosis is greater in this country than it is in England. Recent figures show that in England for each person who dies each year of tuberculosis there are roughly eight to ten sufferers from tuberculosis under treatment; in New South Wales for each person who dies each year of tuberculosis there are approximately sixteen notified sufferers living. The implication of this is that more hospital accommodation and more facilities for treatment are required in proportion to the mortality rate in Australia than in England. The National Tuberculosis Association of the United States of America has stated that the number of beds required for tuberculosis in a given community is from 1·5 to two for each death which occurs from tuberculosis annually; by this standard the shortage of beds in New South Wales is from 400 to 900, but if we allow that the expectation of life of sufferers from tuberculosis is greater here than elsewhere, the shortage must be greater still.

Bovine Tuberculosis.

It is usual to commence discussion of the means of controlling tuberculosis with a consideration of bovine tuberculosis—that is to say, tuberculosis conveyed to human beings by the milk of cows with tuberculosis of the udder. Bovine tuberculosis accounts for a certain amount of tuberculosis in childhood, and that amount in this country is small and diminishing, although it is quite appreciable. Pulmonary tuberculosis is almost never bovine in type in this country. I do not propose to speak tonight of the means of preventing bovine tuberculosis altogether, because I hope that the subject of milk consumption in its relation to health and disease will be discussed at a future meeting of this section.

OBJECTIVES AND METHODS IN THE CONTROL OF HUMAN TUBERCULOSIS.

The human type of tuberculosis is usually passed from person to person by cough spray and by expectoration and excreta. When this was first discovered sixty years ago it became possible to introduce precautionary measures against infection; for instance, legislation against spitting in public was introduced in many countries without delay. But public apprehension was awakened perhaps more than it should have been. There is to us even something faintly comic in the spectacle of a Sydney suburban municipal council trying to prevent the erection of a badly needed chest hospital within its municipal boundary, lest a lethal miasma should come from it and settle in the children's lungs. This happened not so long ago, but perhaps if the truth were known their fear was not so much of infection as of a depreciation in the values of nearby properties.

The principal objectives in the control of human tuberculosis are to prevent infection; if infection has occurred, to prevent it from causing disease; if disease is present, to prevent it from growing worse and to try to make the patient better.

Prevention of the Infection of Children.

A great many people acquire tuberculosis infection (as distinct from tuberculous disease) during their lifetime, but are apparently none the worse for it; it is even likely that in many cases their resistance to tuberculosis is enhanced by it. One of the most serious forms of infection is that which passes from parent to child, because of all the persons who develop tuberculous lung disease a large proportion have sustained infection from a parent in childhood; also a relatively large proportion of the children of persons suffering from tuberculosis develop the same disease. It would seem desirable therefore to prevent as far as possible the passage of infection from tuberculous parents to their children. But it is not easy to do so.

Various methods have been suggested of preventing infection of the children of tuberculous parents. The National Health and Medical Research Council stated in 1932 that "the removal of the source of active infection from the family is of fundamental importance". I think that this statement must be qualified at the present day. In the first place, infection of the children and other members of the family has often already occurred when tuberculosis is first diagnosed. When I made the tuberculin survey in 1938 I found that in Sydney 40% of the children of tuberculous households were infected by the age of five years and 60% by the age of ten; most of the tests were made soon after the sufferer's disease had been diagnosed. In the second place, if everyone who had tubercle bacilli in his sputum was divorced from his family and detained in an institution till he was no longer capable of conveying infection, there would need to be some pretty large institutions, and there would be a perpetual "catch-as-catch-can" between the law and those sufferers not needing institutional treatment for their own sake. Many patients are easily persuaded to leave home for the sake of others; but apart from the economic distress that voluntary or compulsory segregation must inflict upon a bread-winner's family, the mental suffering that the idea of segregation for segregation's sake brings to many patients is enough to prejudice the recovery of health.

In a word, segregation is impracticable; on the other hand, much could be done to reduce the infectivity of tuberculosis within the family by improving town planning or, rather, suburb planning and the housing of the people. We all know that in this great country with its wide open spaces there is a severe shortage of houses and consequent overcrowding, and that many of the houses that exist are ill-designed and crowded. This will be a matter for discussion at a future meeting of this section.

An alternative suggestion that has been made in order to "break contact" is the separation of the children from the tuberculous parent and their accommodation in large institutions set up in salubrious country districts and termed preventoria. We should not be over-ready to snatch away the children out of what may seem to us at first sight to be unsatisfactory homes and bring them up in a manner nearer to our own hearts' desire somewhere else. A poor home or a small one is not necessarily bad. I think that what is required in this country is the establishment, not of preventoria, but of children's holiday homes, staffed by trained nurses and with educational facilities, for the temporary accommodation of children who react to tuberculin and who are in a state of malnutrition or debility. I believe that at the present day in this country infection with tuberculosis in childhood is of itself of minor importance; most children have a natural tendency to overcome it. It is malnutrition and debility from any cause that are dangerous; these things act as manure in the soil, and they allow the seed which would otherwise wither to spring up as florid tuberculosis. In some northern countries things are otherwise; in Scotland, for instance, it has been shown that the mere infection with tuberculosis leads to the development of manifest tuberculous disease in a considerable proportion of children; in this country at the present day we need not wring our hands when a child reacts to tuberculin, although admittedly we do encounter a few cases of tuberculous meningitis. It is the prompt recognition of malnutrition and debility in all those who have been infected with tuberculosis that is of cardinal importance. In my own practice I insist on the frequent weighing and occasional medical inspection of all the young infected

home-contacts of sufferers from tuberculosis until they have reached the age of twenty-five years. For those who are "peaky" there is nothing like a congenial holiday away from home, and I am convinced that this kind of supervision and treatment pays a very rich dividend in the prophylaxis of tuberculous disease.

I have just a few words to say about the idea of trying to prevent infection in children, or even of trying to stamp out tuberculosis, by telling sufferers that they ought not have any children. I am certain that this doctrine has been worse than a death sentence to many sufferers. Even young women suffering from pulmonary tuberculosis may often bear and rear a child quite safely; much depends upon the circumstances of the case. Sometimes persons with quiescent or arrested tuberculosis are told by the doctor to "wait a few years until they have their health again"—the doctor says this in a kindly spirit, but he knows in his heart that their health will never be substantially better than it is when he speaks. Every case has to be considered gravely on its merits; but one should not forget that there is always a penalty for the frustration of primary instincts, while their lawful gratification is often productive of more good than harm.

Prevention of Infection in Adults.

It has been more or less generally held until quite lately that tuberculous disease rarely results from tuberculosis infection in adult life—that adult tuberculosis is a late manifestation of an infection acquired much earlier in life. However, to go back again to my tuberculin survey in 1938, I showed then that in this country the incidence of infection increases steadily with increasing age throughout life. And I think it is now widely held that infection with tuberculosis which may be soon followed by florid disease may occur at any age, although it is more frequent in the young.

I believe that tuberculosis in the adult seldom arises from casual infection in adult life. I believe that the contact with the infected person usually needs to be intimate and repeated and the soil manured by malnutrition or by great physical or nervous stress. I feel that random spitting, though an unpleasant habit, must be very seldom or almost never the source of tuberculous disease in previously non-tuberculous households.

However, there are certain groups of people, especially young people, who are exposed to more than ordinary contact with tuberculosis, and who can be shown to sustain infection at a heavy rate. I refer especially to nurses, medical students, doctors and mental hospital employees.

The Hospitals Commission of New South Wales a year or so ago circulated to all the hospitals under its control written advice of classical correctness upon how to prevent harm resulting from the chance exposure of their nurses to tuberculosis. It has advised that all trainee nurses should be tested with tuberculin upon commencing their training and that only those who are reactors to the test should be allowed to work in any place set apart for the nursing of tuberculous patients. It also advised that the non-reactors should be retested from time to time, so that any who had become infected during their period of training might be recognized and investigated by X rays before they had been infected for very long. It has also advised that all nurses should be examined by X rays at the commencement of their training and every year thereafter. I think that money and film might be saved by restricting the X-ray examination of non-reactors to tuberculin to the beginning and end of the period of training; still, the commission's advice is good and safe.

I think this advice for the protection of nurses from tuberculosis could even be improved upon. I would suggest that in addition every nurse should have her weight recorded every month, and that steady loss of weight should always become the subject of inquiry. Tuberculosis can reach out into the lungs and cause serious and extensive disease in a surprisingly short time; if an annual X-ray examination is relied upon, the trouble may be well under way before it is detected. In most of the cases that I have encountered, an inquiry into the state of health as soon as loss of weight had become apparent would have prevented a great deal of damage to the lungs. I may add that it seems to me necessary to insist that the nurse should be entitled as of right to a sympathetic hearing from her superiors when she "reports sick", and to private consultation with the superintendent or some other medical officer attached to the hospital without a queue of other nurses lined up behind. I feel that nurses with tuberculosis have sometimes not "reported sick" as soon as they should have done, because they feared expostulation by an unsympathetic sister or matron or a public ordeal by medical examination. These words do not apply to the Royal North Shore Hospital of Sydney.

The measures which I have outlined for the prevention of tuberculosis infection in hospital nurses can easily be adapted, *mutatis mutandis*, to the prophylaxis of the disease in other groups of persons who are unduly exposed to infection.

I only wish that the advice which the Hospitals Commission has tendered to the general hospitals was generally followed; especially do I wish that it was followed in the mental hospitals of New South Wales. I believe that it is not. Several nurses and other workers in mental hospitals whom I have seen professionally had never been tested with tuberculin or radiologically examined. Yet in the mental hospitals a large proportion of the inmates have been infected with tuberculosis, and the proportion of patients suffering from actual tuberculous disease may well be much greater than in the general hospital population.

The Prevention of Lung Disease in Persons Infected with Tuberculosis.

I have already said that tuberculosis infection in infants is not in itself a tragedy, because most children (in this country at the present day) have a tendency to overcome it; it is malnutrition or debility from any cause that is dangerous; these act as manure to the soil in which the tubercle bacillus has been planted. There is also, however, no doubt from the result of experiments in other parts of the world that the incarceration of infected children of tuberculous parents in preventoria till they are grown up does not prevent tuberculosis. Such children later develop tuberculosis, especially between the ages of fifteen and twenty-five years, just as often as children who have lived with their parents. Malnutrition and debility still breathe life into their dormant tubercle bacilli; but not only these—chronic over-fatigue and nervous tension, especially of a depressing kind, frequently determine the onset of serious lung trouble in young adults, who had been up till then apparently never a penny the worse for tuberculous infection in childhood.

From nearly every young adult who is found to have early tuberculosis of the lung one may hear a sad story of run-down health from these causes which often could have been avoided. Let me quote some typical histories of young people, all of whom were the children of tuberculous parents.

A lad, who was rather young for his years, did man's work in a foundry and lost weight; after some months he developed a cough, and tubercle bacilli were found in his sputum.

A young man worked for fifty-two hours a week in a factory, travelled a long way to work and attended a technical college four nights a week; he was often too tired to eat a good dinner, and he lost weight; one day he coughed up blood.

A young woman who was deeply attached to her father lost weight very soon after his death from tuberculosis and was then found to have tuberculosis herself; an X-ray film of her lungs had been of normal appearance only a few months earlier.

A young woman whose fiancé is a prisoner of war met an American officer, and before very long was writing to him every night; she felt deeply, however, that she had dealt unfairly with her fiancé, and was full of remorse and lost weight; now she had been found to have early tuberculosis.

A young woman left her home in the country to work in a factory; she shared a "flat" (a room) in a crowded district with another girl. She had "skimpy" meals and often stayed up pretty late at night; she lost weight and developed pleurisy with effusion.

Such histories could be multiplied endlessly. Sometimes illness is the cause of the debility that precedes tuberculosis, not the other causes which these cases illustrate.

A student whose mother had tuberculosis suffered from severe streptococcal pharyngitis and lost half a stone in weight. He was advised not to resume his studies for at least three weeks, but he took no holiday. He "did not pick up" and soon after got "rheumatism in the shoulder". An X-ray film revealed pulmonary tuberculosis, although a film had been of normal appearance nine months earlier.

The lesson that these histories teach is that the infected offspring of tuberculous parents should remain under medical supervision until they have reached adult life—in fact, until they are at least twenty-five years of age. It is usually recommended that they should see a doctor and have an X-ray film taken every year, or perhaps every six months; but this is not enough, as several of the histories which I have quoted show. An important thing that should be drilled into them from childhood is that they should weigh themselves regularly and keep a little record of their weight, and report any untoward decline in weight or any ill health to their doctor. Do not misunderstand this emphasis which I am placing on loss of weight; I know that it is not an invariable accompaniment of early tuberculosis—the sufferer may gain in weight—but it is a subtle sign of all not being well that is often overlooked. Let them come up for annual supervision by all means, and let X-ray films be taken; but the doctor should not just sound their chests when he sees them and look at the X ray and reassure them; he should hear their news—how they are employed and how they are living and whether they are happy. If necessary he should tender such advice as his experience and wisdom dictate. If loss of weight has occurred, he should know the reason why and do his best to see that it is regained.

Improvement of the Outlook for those Suffering from Lung Disease.

Of the various factors that decide the fate of the person suffering from tuberculous disease of the lung, among the most important are the extent of the disease at the time its presence is discovered, the mental attitude of the patient and the quality of the treatment which he receives.

Early Diagnosis: Education, Notification, Photofluorography.

Many tuberculous patients already have disease that is no longer in an early stage when they first consult a doctor or when their disease is first recognized. Much has already been done in this country to give the public information that it should possess about tuberculosis and to combat dread of the disease by emphasizing the advantages of early diagnosis. This is work which ought to proceed as energetically in wartime as during peace.

I do not think that all doctors realize the importance of the notification of every case of pulmonary tuberculosis that they come upon, whether the patient is disseminating bacilli or not. There is, I think, a vague belief that notification will lead to a dreadful visitation of the patient's household by the Board of Health, led by the Director-General in person, full of testy and captious criticism of the sanitary arrangements. Of course, that is not what happens at all. I believe that most patients who are visited by the health department's nurse are grateful for the tactful help that they receive from her—and this help can be very great. The important point is that these visitors are often successful in inducing near relatives and contacts of the patient to seek regular medical examination when the medical attendant himself has been unable to do so; in this way their work is often most valuable in effecting early diagnosis. I only wish that they went round in motor-cars and not on foot, so that they could do more work.

The fact that early tuberculosis may be symptomless as well as silent to the stethoscope has been an important reason why X-ray films have not been taken till disease is well established. In the last few years the development of photofluorography has provided a means whereby the initiative of the X-ray examination may pass from the patient to the doctor. This is not the place to say very much about photofluorography, but I should like to take just a brief glimpse at its future.

We are all familiar with the brilliant pioneer work done in subjecting every member of the Australian Imperial Force to an X-ray examination of the chest by means of mass miniature radiography. After the war I do not doubt that the mobile and stationary units where these examinations have been made and others like them will be made available to the population at large. In particular I imagine that proponents for life assurance and superannuation will be offered this form of examination, and that the premiums of those who are found to be free of lung disease will be less than those who have been accepted without this form of examination. I imagine that employers of large numbers of people will find it well worth while, because of the reduction in absences through sickness that it would effect, to offer this form of X-ray examination to all their employees free or for a nominal cost; this could be done by chartering one of the mobile mass radiographic units, which I imagine will be under the control of the Department of Health. The same mobile units I suppose will regularly visit the universities. I imagine, too, that all persons who seek treatment at public hospitals will be able to have an X-ray examination of the chest by this method. An important point is that it will be used for a survey of the incidence of tuberculous disease in the mental hospitals.

The Patient's Equanimity: Economic Considerations.

After early diagnosis the most important factor that decides the fate of a sufferer from tuberculosis is his mental reaction. The diagnosis having been made, the prime duty of those responsible for his care is to safeguard his equanimity. However, the doctor must never tell the patient anything but the truth, and he must always say what is the matter.

I have several times seen young adults suffering from tuberculosis who had not been told by their doctors what was the matter, the information being sometimes withheld at the express request of the parents or other members of the family. But the patients have been intelligent, and though they kept it to themselves, have tumbled to the truth because of the precautions against infection of which they found evidence, or because they received equivocal answers to their questions about their sputum test. In all such cases there has been an atmosphere of nervous tension, usually enough to prejudice the favourable progress of the patient. A frank exposition of the situation, and the laying down on the spot of a plan of campaign to meet it and a little justifiable optimism clear the air like magic.

If the patient is the breadwinner of a family, his equanimity will be seriously disturbed by the prospect of economic disaster for the family. Not only may his anxiety about provision for his family of itself impair his health and reduce his capacity for recovery, but it may actually cause him to keep working when he knows he ought to give over, or to resume work as soon as he is able when he knows he is not yet really well enough to do so. What is the use of early diagnosis then? It is the fear of such a dilemma which makes many early sufferers conceal their failing health. Tuberculosis is a disease that tends to reduce the standard of living of the patient and his family and thus cause him anxiety; yet it requires freedom from anxiety and a good standard of living for its successful treatment. It is a disease in which a stitch in time saves nine. These are things that should be and are taken notice of by the State, for one reason because tuberculosis is a disease which affects the most potentially productive members of the population.

In this country a person who is unable to work on account of tuberculosis has, especially during this last year, received from the Commonwealth a more generous measure of financial assistance than persons incapacitated by other diseases. In the laws which have been made to this end, laws which reflect the goodness of humankind in general to their fellows who are ill (of which we see little examples every day), we may perhaps see fore-

shadowed some of the provisions for the welfare of the sick which will be made in the future by legislators of goodwill in this and other countries. A person who is unable to work on account of tuberculosis may receive the Commonwealth invalid pension, whether his incapacity is likely to be permanent or not, and this is, of course, quite right; whereas, if he was going to have a long illness from rheumatic fever, say, or lung abscess, he would not be qualified to receive the invalid pension even though he was destitute.

The amount of the invalid pension is according to the patient's means up to £1 7s. per week. In addition, the *Invalid and Old-Age Pensions Act*, 1943, provides that the wife of an invalid pensioner may receive an allowance, according to her income and means, of up to 15s. per week. This act also provides for an allowance of 5s. per week for each dependent child under the age of sixteen years. In addition, in New South Wales the State Child Welfare Department makes a grant of 10s. per week in respect of each child under the age of fourteen years, in addition to 5s. per week in respect of the first child, which is not endowed by the *Child Endowment Act*, 1941. When the family is destitute the State may provide food relief to the value of 14s. per week. One could not cavil at this liberality on the part of the Commonwealth and State, which is certainly greater than in many other countries, were it not that in this State the basic wage for an adult male is declared to be £4 19s. per week. It is hard to live on less than the basic wage. The service pensions payable to tuberculous ex-soldiers are more generous, and with less financial worry the ex-serviceman is in a better condition than the civilian to benefit from the treatment he receives.

Treatment: Institutional Accommodation.

The third prime factor which decides the fate of the sufferer from tuberculosis is the treatment he receives. With regard to treatment, I should think that this section would wish me to speak only of the organization of collective treatment. I do not think that there is anyone who has any difficulty in obtaining out-patient treatment for tuberculosis in this State except in the country districts. However, for years now there has been a really grave and distressing lack of hospital accommodation, of which I think the public at large is but dimly aware. Persons suffering from pulmonary tuberculosis whose need of hospital and sanatorium accommodation is urgent just cannot obtain it. I shall give two examples which will illustrate what is happening.

A working man, aged thirty-five years, who had tuberculosis and became well at a sanatorium thirteen years ago, recently worked a great deal of overtime and lost weight, and the disease in his lung flared up again. Although he gave up work and rested, he remained poorly, so as he was infective and living in a boarding house I recommended him for admission to Waterfall Sanatorium. He was told at the health department that he would have to wait at least six months for admission. I doubt whether he will ever get there.

A working girl, aged twenty-one years, fell ill with florid tuberculosis of both lungs ("galloping consumption"). She was an orphan and had one younger brother who was with the Australian Imperial Force in New Guinea. She was boarding and shared a bedroom with the landlady's daughter, aged nine years. There was no other accommodation. I recommended her for admission to the Randwick Auxiliary Hospital; but her landlady was told at the health department that she would have to wait at least two months for admission. Fortunately, however, she was placed temporarily in a suburban "convalescent and rest home" run by an elderly nurse.

What is the use of improving facilities for diagnosis if the treatment which it discloses to be necessary is not available?

There are approximately 1,000 beds in public hospitals and sanatoria in New South Wales for the treatment of tuberculosis. At present there are over 250 patients awaiting admission to these beds, and many more would be recommended if their medical attendants could hope to obtain admission for them (or if the patients could afford to accept admission). The waiting time for admission varies from one to four months in urgent new cases. Sometimes the delay is longer; patients who have had previous institutional treatment in sanatoria must wait longer; for instance, patients requiring readmission to Waterfall Sanatorium are placed on a different waiting list from those seeking admission for the first time and usually must wait at least twelve months, no matter how great their need or to what extent they are endangering others. Often their condition deteriorates so much that they are no longer able to benefit from sanatorium treatment.

There is and has for a long time been in Sydney a pressing need for 1,000 more beds for the tuberculous, including a permanent and properly equipped chest hospital of 600 beds. In 1942 a sum of £150,000 had been actually allocated by the State Government to the construction of a chest hospital, but the money was spent in that year on air-raid precautions. It seems unlikely that the money will be forthcoming from the same source again.

An even greater problem at present is the provision of the nursing and domestic staffs, for many of the beds that we now have are not usable owing to lack of staff. This is a problem that is not peculiar to New South Wales. Public authorities responsible for the care of the tuberculous should understand that the nursing of tuberculosis is a branch of nursing which for perfection requires special knowledge and a skill that comes from experience. It is desirable that those who undertake it should be of mature years and should be in good physical condition, that they should undergo a period of training in a tuberculosis hospital, and that when they are qualified they should receive substantially greater remuneration than general nurses—on a scale comparable to that of theatre sisters and orthopædic sisters. They should also receive periodical medical examination and paid holidays of at least four consecutive weeks in every year. The tuberculosis nursing service should be a select body of women; notwithstanding the present shortage of nurses, entry to it should be limited to those of superior physique and intelligence; its standards should be similar to those of the Royal Australian Naval Nursing Service; *esprit de corps* should be fostered among its members, as well as discipline, by a matron-in-chief, and they should wear a distinctive brooch on their uniform. The domestic and lay employees of any new hospital should also be organized and paid commensurately with the importance of their calling; they should also be required to conform to certain physical standards and should be permitted to wear a special miniature badge in their lapel or dress.

Should such a tuberculosis service be established, and should the recruits to it which the urgency of the tuberculosis position demands be still not forthcoming in wartime, the temporary diversion of suitable candidates to it from other occupations would be necessary. A committee of the New South Wales Division of the Australian Red Cross Society, which drew up a report in March, 1943, on the services available in New South Wales to persons suffering from pulmonary tuberculosis, has indicated the way in which the manpower directorate might proceed to accomplish this diversion.

At present the conclusion seems inescapable that the provision of an adequate service to persons affected with tuberculosis is a task beyond the strength and resources of State health departments, though their officers have done well with what they have been given. On the other hand, there is evidence that the Commonwealth Government is interested in the national health and that it will shortly seek constitutional power to make laws with respect to it. If the Commonwealth, which has already led the world so brilliantly in the prophylaxis of tuberculosis in the military sphere, was able to and did extend to the whole of the Australian people the benefits of its experience, accompanying prophylaxis and diagnosis with a medical, nursing, hospital and social service for the tuberculous, this would be a resounding first step in national medicine.

The Prevention of Relapse after the First Restoration of Health.

In 1935 it was shown by Dr. John Hughes that of 280 persons who were admitted to tuberculosis sanatoria in New South Wales, 40% had died within five years. How many of the others were as well as when they left the sanatoria was not stated. There are undoubtedly many sufferers from tuberculosis who are able to keep the disease at bay and become restored to good general health so long as they live a sheltered life. But they never quite squeeze their bacilli out of the symbiotic partnership, and when they return to the hurly-burly of life and work and suffer nervous and physical stresses their resistance is diminished or their allergy increased or both, the tables are turned and the bacilli are able to squeeze them out of the symbiotic partnership.

Of course, the outlook for persons leaving sanatoria is not as bad now as it was in 1935. Since then there has been a wider realization of the uses of operative surgery in the treatment of tuberculosis, and fewer patients are discharged from sanatoria in a highly vulnerable state, with patent cavities in the lungs and bacilli in the sputum. However, in New South Wales today many people who need major or minor surgery to save or prolong their lives are denied it because of the lack of hospital accommodation, facilities for surgery and doctors to do it.

A reason why many sufferers who have done well relapse when they quit the sheltered life, is that they return to occupations which require too much nervous or physical energy. In other countries attempts have been made to protect these people by public schemes to provide them with light or part-time work with subsidized wages. A period of training may precede the allotment of work. Usually medical supervision is provided to ensure that the patient adapts himself to his new employment. There is a considerable literature now on this matter. In this country up to the present there has been no systematic scheme for providing light work for the tuberculous or for training them to do it. Hospital almoners do much valiant and excellent work grappling with the problem, and the Commonwealth Department of Labour and National Service and the Social Welfare Department of the Australian Red Cross Society do what they can. But the majority of patients cannot be suitably placed, and they meet their downfall grappling, in their need and their despair, with the same old unsuitable work that contributed to their downfall before. I understand that the Commonwealth Department of Pensions is about to set up a bureau for the training and reemployment of physically handicapped persons; this was envisaged in the *Invalid and Old-Age Pensions Act*, 1943. The Red Cross committee that reported last year recommended "that a special section of the Commonwealth Department of Labour and National Service should be established immediately to deal with the employment of physically handicapped persons, to explore and develop fields of employment in normal industry and to report upon the necessity for legislation to provide special conditions of employment", and "that statutory financial aid be made available to persons affected by tuberculosis according to their need and to provide for basic requirements such as rent, food, clothing and fares and for special needs such as tools or training fees", and "that the wages of persons in 'modified' employment be subsidized up to the amount of the award wage". You will see that the report envisages the installation of ponderous machinery to bring about the desired end, and you may well ask where there are to be found both the authority and the capacity to get anything done; the Pensions Department scheme if it comes into operation will be a step in the right direction. You may well ask also what provision can be made to safeguard the health of those who return from a sheltered life to the most difficult and dangerous occupation of all—I refer to that of housewife. The provision of domestic assistance would be a great help. But the hazards that beset the housewife during her rehabilitation are not only those which are measured in terms of finance or hours of work; the supervision of her health demands deep understanding and insight into the problems of domestic life.

I think that there is much to be said for the establishment of a tuberculosis division of the Commonwealth Department of Health charged with the function of providing a diagnostic, medical, nursing, hospital and social service for the tuberculous.

CONCLUSION.

I have tried to systematize the subject of the control of tuberculosis, and I think I have been able to show that it is an especially apt subject for the consideration of the Section of Sociological Medicine at its first scientific meeting. Public work is urgently required to be done, and it is up to the section to seek out the truth and try to clarify the public mind. In this paper I have sought to show that we should try to prevent tuberculosis infection of children, not by attempts at the segregation of infected persons or of their children or by the frustration of human instincts, but by improving town planning and the housing of the people, and also by combating malnutrition and debility and providing children's holiday homes for this purpose. I have sought to show that we should try to prevent tuberculosis infection in adults by insisting that public authorities should make use of the knowledge of how to do so that medical science has placed in their hands. I have sought to show that we should try to prevent lung disease from developing in persons who have been infected with tuberculosis by educating the medical profession to watch their health and to recognize and combat malnutrition, debility and the causes of excessive physical and nervous stress. I have sought to show that we should try to better the outlook for those suffering from lung disease by modern methods of achieving early diagnosis, by improving the patient's equanimity, and by providing more institutional accommodation. I have suggested that the equanimity of sufferers could often be better assured by removing economic insecurity and remedying flaws which remain in our invalid pensions laws; also that the present stalemate in the hospital position might be overcome if the Commonwealth were to assume responsibility for national health and fitness. Finally, I have sought to show that we ought to do more than is now done to prevent sufferers from relapsing after the first restoration of their health; this is one of the major problems in the control of tuberculosis, and I have indicated the ponderous nature of the machinery which seems to be required for its solution.

INSOMNIA.[1]

By LAURENCE HUGHES,
Sydney.

Now blessings light on him that first invented this same sleep.—CERVANTES.

If a patient can always sleep long at a spin that is a good patient.—JAMES PAGET.

THE present century has witnessed some remarkable advances in the treatment of disease which have been the outcome of scientific research. Many examples could be quoted in extension of this statement, but a few may be specifically mentioned, such as the treatment of *diabetes mellitus* by insulin, of pernicious anæmia by liver and stomach extracts, of deficiency diseases by vitamin and endocrine preparations, and in very recent times the treatment of various acute bacterial infections by drugs of the sulphonamide group. In this impressive march of medical progress it is salutary for us as physicians to halt occasionally and take stock, to ascertain if our equipment is adequate in regard to the requirements necessary for the practice of what we are still pleased to call the art, in contrast to the science, of medicine. Great as is our debt to the ancillary sciences, there has been in recent years

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on April 27, 1944.

too great a tendency to practise medicine from the laboratory and even sometimes to regard the patient as a laboratory animal. Professor Ryle has aptly stated the case in this respect:

> The old ætiological interest and humanism of our forefathers have tended to take a second place. Investigation to the limit, mainly by objective methods and often with too little said to or done for the patient during or after the tedious process, has been the prevailing trend. More and more accurate assessments of local pathology with the help of more and more colleagues and instruments and less and less understanding of the patient as a whole man or woman with a home and anxieties and economic problems and a job to be held or lost, have become the order of the day.

Whatever be the nature of the illness for which a patient is under treatment, certain general therapeutic principles are applicable to the welfare of the patient as a whole, irrespective of any specific measures which may be available for use against a known ætiological factor in the illness. One of these principles is to see that the patient obtains an adequate amount of sleep.

In many disorders sleeplessness or insomnia is a dominant and troublesome symptom. Throughout the ages physicians have recognized the necessity of sleep in the maintenance of health and recovery from illness and have sought means of inducing it. Poets, too, have sung its praises over the years, admittedly at times, as Walter Murdoch has expressed it, to the extent of making "an obsession of this business of getting to sleep". He considers that this was so much the case in Elizabethan times that "Shakespeare's period may be concisely described as the Age of Insomnia".

A discussion on insomnia must necessarily include reference to the physiology of sleep, but as this subject is as yet imperfectly understood, the reference will be brief. Pavlov's dogs, lulled to sleep by widespread conditioned inhibition of cortical activity, and Hess's cats who slept as a result of stimulation of the hypothalamus through electrodes embedded therein, provided convincing demonstrations as to how sleep may be induced, but the problem of why we fall asleep remains an unanswerable riddle. Kleitman believes that sleep is due to diminished activity of the cerebral cortex from a decrease in the number of afferent impulses reaching it from the sensorium. These include especially the proprioceptive impulses associated with the maintenance of muscular tonus, which may decrease as the result of fatigue or muscular relaxation with subsequent sleep. It is tempting from these hypotheses to suggest that the hypothalamus may in some way interfere with cortical function in regard to its reception of afferent impulses, and that the normal daily rhythm of wakefulness and sleep is a "conditioned" phenomenon. Chemical theories of sleep, though unconvincing in many respects, cannot be disregarded in view of the specific action of benzedrine in producing wakefulness. Furthermore, the chemical metabolites of fatigue may be one of the factors in this condition which influence the sleep mechanism.

Insomnia may be a symptom associated with some state of physical discomfort, such as the pain of a diseased organ, the frequent cough of respiratory disease, the dyspnœa of cardiac disease, flatulence of a disturbed digestion, pruritus from varying causes, the toxæmia of infections, and various environmental factors. On the other hand, it may be present as the dominant symptom from mental disturbances such as neuroses, anxieties and psychoses. Frequently the loss of sleep is dependent upon more than one factor, or having arisen primarily in association with an illness, it may after recovery from the illness be aggravated by mental factors. Insomnia is also frequently present when the physiological mechanisms associated with normal sleep are interfered with by organic disease of the central nervous system, such as cerebral arteriosclerosis, cerebral tumours and encephalitis.

It is obvious that when insomnia is due to pain and other conditions producing physical discomfort, its treatment is largely a matter of measures directed towards the alleviation of the condition in question. More difficulty often arises in those instances in which insomnia presents as a dominant symptom associated with some psychological or environmental factor, and it is to these cases that more particular attention is directed in this discussion. Before proceeding further it is advisable to make certain observations concerning, firstly, the establishment of a diagnosis of a state of insomnia, and secondly, the type of insomnia present.

It must be realized that many patients tend to exaggerate insomnia as a symptom, and it is important to try to estimate as accurately as possible the actual amount of sleep which each patient obtains. This is a comparatively easy matter when the patient can be observed during his sleeping hours, but when one has to depend on the patient's own story it is more difficult. A patient may, for instance, have periods of wakefulness during the night and complain insistently of insomnia, when in fact the actual amount of sleep obtained has been adequate and the patient shows no symptoms of mental or physical fatigue associated with loss of sleep. It is important also to question the patient as to his previous normal habit of sleep and to note in what manner his present disturbed sleep deviates therefrom. This raises the question of the type of insomnia in individual cases. The patient may complain of delay in getting to sleep for some time after going to bed, though subsequent sleep is undisturbed. On the contrary, there is the patient who begins the night with a relatively sound sleep and then wakes up and lies awake for a varying time. This type of insomnia is likely to be associated with organic disease—for example, peptic ulcer or cardiac affections. Thirdly, there is the "light sleeper" who wakes fitfully through the night, or whose sleep is possibly disturbed by nightmares and is so aptly depicted by the Lord Chancellor in "Iolanthe":

> Your slumbering teems with such horrible dreams
> That you'd very much better be waking.

Finally, there is the patient who awakens in the early hours of the morning and is unable to go to sleep again.

The presence of insomnia having been determined, rational therapy can be effected only after a careful physical examination to exclude organic disease as the main or contributory cause of insomnia, and after a full and patient inquiry as to the possible psychological disturbances which may be responsible for the condition. It is the sleeplessness associated with the worry of business, domestic and social difficulties and environmental factors with which we are especially concerned in this discussion. The ætiological factors enumerated above vary between those that may be of a trivial nature and readily ascertained and those that are involved and necessitate psychiatric investigation. I have no intention of trespassing upon the preserves of my colleague who is to address you later, but I feel sure that he will agree that some of the minor anxiety states in which insomnia is often a symptom can be adequately handled by an understanding general physician.

Patients with severe insomnia who are being treated for the first time or who have been previously treated ineffectively with large amounts of sedatives should be under institutional care, but in the majority of cases this is unnecessary. As a preliminary to any treatment an endeavour should be made to establish the patient's confidence and to allay any fears which he may entertain as to the grave effects of sleeplessness. The constant tension arising from the worry of making an effort to sleep and the dread of not sleeping do not allow the relaxation which is necessary for normal sleep, and the insomnia is aggravated. Gee remarked many years ago that "anxious desire for sleep hinders sleeping according to the universal law that voluntary participation in an involuntary act inhibits accomplishment thereof". The next step is to eliminate any environmental factor, such as cold, discomfort in bed, unpleasant and irritating surroundings and disturbing noises. The effect of cold is to interfere with the proper relaxation of the blood vessels of the skin and the resulting free cutaneous circulation which is requisite for sleep, and the homely warm bath or warm drink on retiring are familiar remedies to overcome this factor. The drink, however, should not contain either tea or coffee,

as caffein facilitates the perception of sensory stimuli through excitation of the nervous system, and this interferes with sleep. Excessive smoking, particularly in the evenings, may have a similar effect. Large or late meals in the evening should be avoided, and if flatulence is a disturbing factor some restriction of starchy and residue-containing foods is advisable. At the same time it must be remembered that insomnia is sometimes associated with hunger, and possible nutritional deficiencies must be kept in mind. This is particularly the case in connexion with children. A proper balance should be established between rest and exercise, for although a certain degree of fatigue aids sleep, excessive fatigue may aggravate insomnia.

At some time or other during the course of treatment hypnotics will generally be necessary. Although it is advisable that in the eyes of the patient their importance should be minimized, they should be used at the beginning of treatment in an endeavour to promote a condition of relaxation and somnolence and thus lessen the establishment of a vicious circle. The patient should also be assured that provided the drugs are used under supervision and only in doses necessary for the purpose, toxic effects and addiction are rare events. However, these provisos need stressing, for there is at the present time a tendency to prescribe sedative and hypnotic drugs for unduly long periods and without proper supervision. As soon as the drug has produced its desired effect, the dose should be gradually decreased and the cooperation of the patient sought in discontinuing its use. The hypnotics available at the present day are innumerable, and there is neither time nor inclination on this occasion to discuss their relative merits in any detail. In general terms it may be said that the physician should make himself familiar with the therapeutic indications and clinical effects of a few well-proven preparations.

There is perhaps a tendency to place too high a value upon the newer hypnotics and to underestimate the value of the older ones. Chloral hydrate, for instance, is an effective hypnotic, produces but slight after-effects, and is almost entirely free from habit formation. The bogy that is often raised concerning its harmful effect upon the heart is unfounded. Its tendency to gastro-intestinal irritation can always be corrected by free dilution with water. It is a particularly useful hypnotic for the restless light sleeper, and the addition of bromide adds to its efficacy in cases of delayed sleep. The repeated use of the combined drugs, however, is likely to cause undue depression owing to the cumulative effect of the bromide. Bromides are not directly hypnotic, but they induce a feeling of rest and relaxation and favour the advent of sleep. They held the field prior to the advent of the barbiturates, and they are still useful drugs in the treatment of insomnia due to overwork and worry. The tendency to cause bromism during prolonged administration should be borne in mind, and their use in nephritis is not desirable. Of the barbiturates, "Amytal" and "Nembutal" are short-acting drugs which are useful in cases of delayed sleep. Barbitone and its sodium salt, "Medinal", are widely used hypnotics. The combination of barbitone with aspirin is helpful in those cases of insomnia which are associated with headache or muscular pain. Phenobarbitone and its soluble salt have side chains which are oxidized slowly and are therefore more effective when a more sustained sedative effect is desired. Paraldehyde is a safe hypnotic, acts for some hours after rapid absorption and is free from after-effects. Its unpleasant taste and the fact that it is excreted through the lungs into the breath for a long time after it is taken militates against its popular use. It is sometimes a useful hypnotic for those patients suffering from insomnia for whom other drugs have been used in large quantities without effect. In regard to alcohol one is perhaps on dangerous ground; but subject to the usual precautions in regard to its use which are applicable to any other sedative, it has its value, particularly in arteriosclerosis and undue fatigue, in which its judicious use at bedtime helps to induce a degree of relaxation necessary for sleep.

Insomnia in Children.

Sleeplessness in children is a common condition and one which often taxes the patience and therapeutic skill of the pædiatrician. It may arise from any factor which causes physical discomfort to the child during the night, such as digestive disturbances from overfeeding, underfeeding or an improperly balanced diet, blocked airways from grossly enlarged tonsils or adenoids, and pain and other such factors of associated disease as have been enumerated in regard to the adult. On the other hand it may be due primarily to mismanagement of the child, and it is in regard to this type of insomnia that I wish to make a few brief and concluding remarks. Dyspepsia in infants may be due to feeding errors, to infection or to a state of nervous unrest. In the last-mentioned instance the mother herself is often of a nervous or over-anxious temperament which is aggravated by the restless infant. The milk supply begins to wane, and this happening, together with the ineffective sucking of the nervous infant, causes hunger and increasing restlessness; thus a vicious circle is established, as a result of which sleep is often much disturbed. In such instances the services of a capable nurse and the administration of chloral hydrate before each feed are often measures of the greatest value. In young children, apart from the resistance to going to sleep which is sometimes displayed as the result of faulty management, true insomnia may occur. The child may lie awake for a long time after going to bed, and if attention is unduly focused upon the difficulty, the child's concern is likely to be aggravated and genuine insomnia established. Chloral administered before bedtime will help to break the habit, and an endeavour should be made to create conditions surrounding the child which may be conducive to sleep. Night terrors scarcely come within the scope of insomnia, since the child is actually asleep—sometimes in a profound sleep—during the attack, and it is not until he is awakened sufficiently to recognize his surroundings that his fears are soothed and he falls to sleep again. The attack usually occurs early in the child's sleeping hours and is not as a rule repeated during the same night. The condition is more common in the nervous, emotional type of child, but there may be other aggravating factors. Prophylactic treatment consists in investigation and correction of the child's daily routine, particularly in regard to diet, education and amusements, and in the administration of chloral as a sedative at bedtime.

INSOMNIA.[1]

By S. EVAN JONES,
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IN nervous and mental disorders we find that certain general symptoms are advanced by patients as their "complaints"; they include headache, dizziness, indigestion, constipation, fatigue, inability to concentrate and disturbance of sleep. Of these the most frequently advanced is insomnia; true, it usually represents only part of the patient's picture, but it is characteristically in the forefront and sometimes is the only symptom of which the patient complains.

Sleeplessness often precedes in point of time the appearance of other signs of nervous or mental disorder, and in young people, in the absence of evidence of extrinsic causes, prolonged insomnia should arouse suspicion that a psychoneurosis or psychosis is imminent. On the other hand, when in the course of a mental illness normal habits of sleep return, this fact usually presages convalescence.

Sleep may be disordered in many ways; it may be short in duration, or intermittent, or disturbed by dreams and

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on April 27, 1944.

nightmares or by somnambulistic activities, or patients may awaken feeling unrefreshed after a normal period of sleep.

A wide acquaintance with insomniacs convinces one that the great majority suffer no physical reaction to prolonged sleeplessness. Nevertheless, patients complain bitterly of their insomnia, which in many cases constitutes their sole interest. Experimental observations indicate that very little sleep is required to remove the effects of fatigue and to maintain life, and that the effects of prolonged fatigue, exhaustion and sleeplessness rapidly disappear after sound sleep. It is probable that for adults a few hours of sleep at night supply physiological needs. We know, however, that most people average eight to ten hours' sleep out of the twenty-four, and that if they are deprived of any substantial portion of this amount they begin to complain of insomnia. It is difficult to avoid the inference that there are two kinds of sleep, one being physiological and essential for the maintenance of life, and the other being psychological and its amount being determined by habit and custom for each individual. It can reasonably be regarded as a psychological mechanism of escape from reality. Actually we do occasionally observe that sleep is used as a diurnal mode of escape or evasion by hysterics, and cases of prolonged somnolence as an hysterical manifestation are not unknown.

This psychological sleep fraction would be analogous to and possibly identical with the sleep induced by hypnotism; it is differentiated from physiological sleep, inasmuch as the latter represents a profound dissociation of the higher cerebral functions from the lower, is deep, and is reputedly not disturbed by dream activities. The former, however, represents only a partial or incomplete dissociation of higher centres, inasmuch as mental activity continues to take place in the form of dreams, somnambulisms *et cetera*. It also varies greatly in depth or soundness. In ordinary insomnia we have to do with disturbance of the psychological sleep, and it is only in cases of absolute insomnia that both elements are disordered.

Although physical effects of insomnia are difficult to detect, there are definite psychic reactions; they are not the direct result of lack of sleep, but represent the patient's emotional response to deprivation of a customary and habitual mode of escape. The patient's emotional response to sleeplessness is exaggerated by the common lay belief that lack of sleep is followed by very serious consequences; in such conditions a vicious circle is established, the fear of the results of insomnia deters the onset of sleep, and nights are spent in a condition of restlessness and anxiety.

The secondary psychic results of insomnia are irritability, inability to concentrate, loss of interest and depression. Worster-Drought explains the mechanism of insomnia on the hypothesis of a sleep-regulating centre, which under normal conditions has a cyclic nocturnal and diurnal activity, partly determined by an inherent automatic tendency, partly acting as a response to the accumulation of fatigue products or the action of habit and suggestion. Insomnia could thus arise in three ways: (i) by afferent stimuli of undue intensity, such as loud noises and bright lights, which would overcome the inhibitory action of the sleep centre; (ii) by an enhancing of the excitability of the cortical centres, so that the inhibitory action of the sleep centre would be ineffective, as, for example, in acute mania, *delirium tremens*, Graves's disease and anxiety states; (iii) by interference with the sleep-regulating centre, which might be affected and rendered incapable of exercising its due inhibitory influence, as, for example, in encephalitis and other organic diseases which affect the third ventricle and hypothalamic areas.

Insomnia has been divided into two classes which have been designated primary and secondary, intrinsic and extrinsic or endogenous and exogenous. The division is useful, inasmuch as it separates approximately the peripheral physical factors from the central emotional factors. Insomnia arises sometimes as a sequel to an organic illness, representing the persistence—or perseveration, to use the technical psychological term—in a functional form of an originally physical manifestation; this, incidentally, is a common mechanism in the formation of neurotic and usually hysterical symptoms. On the other hand, insomnia may be determined by habit, and in this form it is seen in business and professional men who have extended their hours of work far into the night. Of a similar nature also is the persistent insomnia which sometimes affects women who have been called upon to nurse a near relative through a protracted illness.

Like other neurotic symptoms, insomnia may have value to the patient as an alibi for the evasion of duties or responsibilities or as a means of exacting sympathy and consideration. In such cases it may be expected that the sleeplessness will be manifested in degree according to reactions of others to its presence. It follows, therefore, that the attitude of relatives, and if the patient is in hospital, of the nursing staff, is very important. Experienced patients will exploit inexperienced nurses to secure a hypnotic or "A.P.C." or aspirin, refusing to settle themselves to sleep until they have secured some adventitious aid.

When manifested as an hysterical symptom, insomnia may appear to be severe and protracted; rarely, however, do patients show ill effects, and their sleeplessness is likely at any time to be exchanged for some other hysterical manifestation.

Although so many neurotic patients complain of insomnia, they can rarely explain what it is that prevents sleep, and they often deny that there are any disturbing factors. In most neuroses and in anxiety states particularly, sleep is inhibited by patients' filling their minds with emotion-exciting trains of thought, by directing attention to worries of business or domestic origin and by preoccupation with the idea of inability to sleep.

If serious mental conflict is present, it is likely that sleep will be disturbed by dreams of an unpleasant character. Sometimes these dreams recur nightly and are of such unpleasant nature that the patient dreads their repetition and remains awake until overcome by fatigue and exhaustion. Sleep is delayed by grief and worries, by fear and by anxious expectation. Conflicts and troubles that have been forgotten temporarily in the midst of daily activities tend to come to the surface at night. Although insomnia is often attributed to overwork, this is a doubtful cause; in most cases when it is so ascribed, there are associated worries and other contributing factors. Very likely an anxiety neurosis or even an early organic state is present. It is well to remember that *dementia paralytica* is often ushered in insidiously, and that its first symptoms may be very vague; insomnia may be one of them. Total or absolute insomnia is rare in the neuroses; its occurrence is usually indicative of an active central process. It is seen in the psychoses, in acute mania and melancholia and in toxic and confusional states.

In neurasthenia, patients characteristically experience difficulty in getting off to sleep and often awake suddenly, sweating and trembling. Sometimes, however, the hours of sleep are normal; but patients awake unrefreshed. Frequently, also, sleep is disturbed by nocturnal emissions, which excite feelings of exhaustion.

In hypochondriasis, sleeplessness sometimes constitutes the focus of fixation of the patient's interest—the patient has a conception of insomnia as a disease; such patients do not respond readily to treatment.

Reference has previously been made to insomnia as a symptom of hysteria. In this condition the patient does not attempt to sleep, the mechanism being identical with that observed in hysterical paralysis and anæsthesia.

Persistent, severe insomnia as an apparently isolated symptom is sometimes indicative of a state of simple depression (melancholia), the patient losing all capacity for spontaneous sleep; investigation of such cases will reveal other characteristic symptoms of melancholia—namely, emotional depression and psychomotor retardation and perhaps also a history of previous attacks of depression or of mania, since this state is a phase of the manic-depressive psychoses. The sleeplessness in such cases will

be found to endure until the cycle of depression reaches its termination, which may be a matter of some months.

In the more acute phases of the manic-depressive psychosis insomnia may be a prominent symptom; it occurs in the agitated form of melancholia, and in acute mania it may be absolute for some time. In these conditions convulsant shock therapy is indicated; in the more acute forms it ameliorates the intensity of symptoms, although it does not always shorten the duration of the illness, and in depressive states it is the treatment of choice. In other psychoses, such as the delirium of acute infections and intoxications, insomnia may be severe and intractable. A partial inversion of sleep rhythm is observed in senile psychoses; patients have a strong tendency to nocturnal restlessness while they are somnolent by day.

Treatment.

The successful treatment of insomnia often taxes the therapeutic resources of the physician. The essential preliminary is to make a careful appreciation of physical and psychological factors that have a bearing in each case, remembering that there are as likely to be functional elements in organic states as physical factors in functional disorders. Careful physical examination is necessary to evaluate or eliminate organic factors, and this having been done, an investigation must be undertaken to elicit psychological factors. We must seek for the usual causes of worry, which are most frequently found in relation to the patient's business and domestic problems.

Psychotherapy.

The first essential in the psychotherapy of insomnia is to put the patient's mind at rest by persuading him to adopt a correct mental attitude to his sleeplessness; his mind must be disabused of the common belief that lack of sleep is followed by grave consequences, examples being quoted of persons who have led very active and busy lives with a minimum of sleep. It will be necessary to educate patients about the use of hypnotics; some people have a morbid fear of them as habit-forming drugs. It is helpful to give a simple explanation of sleep and its mechanism, of the amount necessary for health, of the factors that contribute to and interfere with the process of going off to sleep. It will be found that in proportion as patients cease to worry about their sleep, they are the more likely to succeed in sleeping.

Nervous patients should not retire too early, and should avoid sleeping during the daytime. They must learn to abandon their diurnal mental activities when they retire, and in particular must be persuaded to leave worries outside the bedroom. Although sleep is sought by a voluntary action, the act of sleeping cannot be initiated by an effort of will, but is rendered the more difficult when voluntary effort is directed towards it. The approach of sleep is discouraged by strong emotional states and by deliberative and constructive thinking on subjects which arouse active interest. On the other hand, sleep tends to come when the mind is free of emotional feeling and when it is occupied by an uninteresting train of thought. It is easy enough to tell a patient not to think actively after going to bed, but not always obvious to the patient how to follow this advice. Actually, it is simply a matter of substituting for an interesting train of thought an uninteresting one; the mind is directed towards some theme which does not excite much emotional reaction and allowed to drift from thought to thought without direction of the will; this amounts to free association, and it will be found that sleep quickly comes. This method, of course, requires the intelligent cooperation of the patient, and is therefore of limited application.

The most difficult form of insomnia to treat is that which is determined by long custom. Some people habituate themselves over long periods to short hours of sleep; they arrange their activities to suit their insomnia, working until the hour for sleep arrives and taking up some occupation as soon as they awaken; they feel little need for sleep, and on the other hand inactivity is distressing to them. In such cases the patients must be taught to rest even if they do not sleep, and the use of hypnotics is to be avoided, otherwise the patients become entirely dependent on them. Recourse should be had to the use of warm baths, the taking of a brisk walk, the reading of a dull book before retiring to create a feeling of readiness for sleep.

Hypnosis is a form of sleep, and hypnotic suggestion is useful in correcting bad sleep habits. Its application will usually be found most convenient in the form of post-hypnotic or delayed suggestion; that is, the patient is hypnotized during the day, and the suggestion is given that he will sleep well when night comes.

Patients should be advised about the general conditions that favour sleep; heavy meals and stimulating drinks should be avoided before retiring, while a light supper is conducive to sleep. Many people, especially those in middle and later life, awake frequently during the night; for them it will be helpful to have a glass of milk or a biscuit or two at the bedside. When nocturnal frequency or micturition is present, patients will be advised to avoid fluids before retiring.

Pharmacotherapy.

In the treatment of insomnia in functional disorders the use of hypnotics should be avoided if possible; yet their use should not be deferred too long, and when they are given, adequate and effective dosage should be employed. Some patients have a morbid fear of drugs, while others too readily have recourse to them; the former must be reassured and the latter restrained in their use.

When insomnia is absolute, as in acute mania, *delirium tremens* or acute confusional psychoses, it is difficult to secure sleep with ordinary methods, and there is a temptation to use dangerous doses of powerful hypnotics. It is, however, a better plan to repeat safe dosage—for example, 1/50 grain of hyoscine or three grains of sodium phenobarbitone—than to give larger initial doses. In acute mania convulsant shock therapy will probably be indicated and in most cases will relieve the intensity of the insomnia. In delirious and confusional states, which are often associated with some degree of polyneuritis and by inference avitaminosis, the use of thiamin is indicated; in practice, the use of insulin in combination with thiamin is found rapidly to moderate toxic delirium.

After a vogue of seventy years or more, bromides have given way to the newer hynotics; their administration will still sometimes be useful, although they have an emotionally depressing action. The barbiturates represent the most useful class of hypnotic drugs; they are well tolerated, act rapidly, leave little "hangover" and have little habit-forming tendency. Their use is so general that it may seem superfluous to utter a warning against their indiscriminate administration. It is, however, not uncommon to see patients who present at the first glance an "organic" picture; they are ataxic and tremulous and often have some degree of mental confusion—the appearance is like that presented in an early Korsakow psychosis. The history reveals that these patients have been taking barbiturates for a considerable period, and they are in fact suffering from chronic barbiturate poisoning. It is important to recognize this condition, because the use of barbiturates is contraindicated, and yet the symptoms call for some sedation. Such patients respond quickly to the administration of thiamin and insulin; if an hypnotic is required, paraldehyde is indicated, as it is in all toxic states.

In the prescribing of hypnotics in functional disorders, it will be found desirable to change the drug from time to time. The use of drugs should be directed towards the restoration of a natural sleep rhythm, and their administration should be regarded as the basis for psychotherapy and not as the whole treatment of the insomnia, the aim being to withdraw them as soon as possible. The process of withdrawal will be effected more smoothly if the patient is not abruptly deprived of his hypnotic. Until he is confident of his ability to sleep, he should be permitted to have his regular dose at his bedside to be taken if he needs it.

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TROPICAL ANIDROTIC ASTHENIA: A PRELIMINARY REPORT.

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THE following description is based on the study of the condition of 10 Australian soldiers admitted to an army hospital in the Northern Territory during the months of February, March and April, 1943, and twelve soldiers admitted to a field ambulance in New Guinea during early 1944.

The significance of the first case of tropical anidrotic asthenia was not appreciated until further cases were found which did not conform to either of the two classical disorders of heat regulation (heat hyperpyrexia and heat prostration). Neither hyperpyrexia nor collapse was present. In all cases similar clinical changes were found in the skin, and the majority of patients, as well as having enlarged lymph glands, had suffered from *Miliaria rubra* (prickly heat) shortly before the onset of the condition.

Definition.

The disorder is a clinical syndrome observed in tropical areas amongst troops who have suffered from *Miliaria rubra* and is characterized by anidrosis (failure to sweat), changes in the skin and enlargement of the axillary and inguinal lymph glands, with symptoms of exhaustion occurring in the heat. Complete recovery usually takes place in six to twelve weeks.

Symptoms.

In 18 out of 22 cases studied the patient gave a history of *Miliaria rubra*. Usually the rash had been severe, extensive and recurrent, but had, as a rule, disappeared three or four weeks before the anidrosis supervened. However, this period was occasionally less, and in two instances the miliarial rash was still present on the patient's admission to hospital.

The onset is insidious. The patient first notices that exercise in the heat of the day, especially in bright sunshine, produces an unusual degree of exhaustion, as well as dyspnœa, palpitation, epigastric discomfort and slight or severe frontal headache with giddiness. A hot, congested or tight prickling feeling in the skin may also be a symptom. At this stage he may notice that he is sweating less than usual; however, he often does not volunteer this information, as he considers it unimportant. Previously sweating has been normal. In the humid atmosphere of the tropics profuse and continuous sweating occurs in normal subjects even on only slight exertion.

With rest, especially in a cool place, these symptoms pass off in from half an hour to two hours, but once established, they are reproduced more readily and severely by less and less exertion, until extreme exhaustion or actual unconsciousness occurs when an attempt is made to carry out some relatively slight physical effort. In severe cases slight symptoms may be present in the hottest part of the day, even while the subject is resting.

When examined during or shortly after such an attack, the patient is extremely distressed and apprehensive. Respiration is increased in depth and rate, up to 46 per minute, the mouth temperature is elevated to between 100° and 102° F., while the pulse rate may be as high as 140 per minute.

Characteristic skin changes are present. On the forehead and face, sweating may be profuse. The palms and soles and perhaps the axillæ are normally moist; but with these exceptions, the rest of the body is completely devoid of sweat and the skin is perfectly dry. Over the anterior and posterior aspects of the trunk and arms, but to a less degree over the forearms, the lower extremities and rarely the palms and soles, the skin appears much coarser than normal; on superficial examination, it looks like exaggerated "goose flesh". On close inspection, the affected skin is seen to be studded with innumerable greyish-white papule-like elevations, which, however, do not surround the hairs as in "goose flesh". The average size is remarkably constant at about one millimetre in diameter. In one case larger lesions were present, obvious vesicles three millimetres in diameter. There is no surrounding red areola. The intervening parts of the skin may be normal in colour or more often, a little paler than the same patient's resting skin. In other words, the flushing of the skin which is expected after exercise does not occur.

When one of the elevations is pricked with a needle, a minute drop of watery fluid may be obtained. The elevations are therefore caused by small vesicles, which are, however, a little deeper than the vesicles of dermatitis. Nor in any other way do the skin lesions resemble those of dermatitis.

The whole arm and fingers, and to a lesser extent the thighs, may be obviously swollen, with obliteration of the natural folds and creases.

To the touch the skin feels rough, tense and inelastic, and is extraordinarily hot and dry. It does not pit on pressure, and consequently the œdema observed is intracutaneous and not subcutaneous.

The axillary and inguinal lymph glands are in most cases moderately enlarged and tender, but not painful.

No significant changes are found in the nervous system, and there is no alteration in the blood pressure or composition of the urine, which is secreted in normal amounts.

With rest in a cool atmosphere, the temperature, pulse rate and respiration rate return to normal in from one to two hours, the skin regains a comparatively normal appearance and the patient again feels comfortable. The lymph glands, however, decrease in size more slowly, and some enlargement remains for a few days or longer, even though the patient rests.

It is extremely common to find soldiers who show isolated patches of the characteristic skin changes without general symptoms. The latter arise only when the change is widespread and sweat production seriously reduced. A mild degree of generalized clinical folliculitis is observed in a proportion of the severe cases. Ichthyoid desquamation has also been seen, especially on the legs.

Clinical Course.

After a minimum period of ten to fourteen days, during which symptoms and signs readily recur on exertion, an increasing ability to undertake exercise with gradual reestablishment of sweating occurs. In all cases sweat production reappeared first on the trunk, whilst the upper and lower limbs regained this function irregularly and later.

Complications.

The only complication seen was impetigo of the face when sweating had been most profuse and continuous. No instance of heat hyperpyrexia complicating this disease was observed, though such a circumstance might reasonably be anticipated.

It is believed that the skin changes frequently lead on to dermatitis. The relationship is at present under investigation.

Differential Diagnosis.

The combination of signs and symptoms of this disorder appears unique. It is more likely that the diagnosis may be missed entirely than that it may be confused with other illnesses. It is particularly likely to be missed if it is mild or if the patient is examined in the early morning. For a "spot" diagnosis, the profuse sweating around the head needs special emphasis.

The necessity for an exercise test in the heat of the day is obvious.

From heat hyperpyrexia (heat stroke) the syndrome described in this paper is differentiated by its premonitory symptoms, by the skin changes, by the lower temperature, and by the more rapid recovery from unconsciousness, should it occur.

Heat prostration should not cause confusion. As dehydration does not occur in tropical anidrotic asthenia, collapse is not seen. The skin is not cold and clammy, the temperature is raised and the blood pressure is normal.

The symptoms are suggestive of a functional nervous disorder, but the skin changes are diagnostic. Malaria and other acute infections may be simulated. Other skin diseases, such as sudamen, should be easily distinguished.

Treatment.

The treatment adopted was to place the patient in a cool ward with adequate ventilation. Rest during the heat of the day was insisted upon; but as the patient's condition improved, exercise was permitted in the cool of the evening. As sweat production increased, so gradually increasing exertion was allowed till complete recovery. The use of desquamating agents is at present under trial. The effect of vitamin *A* will also be tested.

Report on the Histology.

The histo-pathology of the abnormal skin has been studied by the examination of serial sections of biopsies. The changes observed are of unusual interest and may reasonably be considered the cause of the symptoms and signs. Work is still proceeding, and it is hoped, at a later date and in better circumstances, to present a detailed report with adequate illustrations. The changes found occur almost exclusively in relation to the sweat glands and their ducts. The findings will be briefly summarized, a start being made with the changes near the skin surface.

1. There is a constant minute hyperkeratotic area, oval in section, strictly confined to and surrounding the sweat duct as it emerges on the surface of the *stratum corneum*. In section the long axis of this area is parallel to the skin surface and is about 0·15 millimetre in length. The opening of the duct is completely occluded by concentric lamellæ of keratin. This hyperplastic keratin is probably of relatively recent formation, and it contains elongated nucleated crescent-shaped cells of the type which normally occur only in the superficial parts of the *stratum mucosum* (Malpighian layer). The occluding keratin extends down the duct for a variable distance, usually as deep as the outermost layer of the *stratum mucosum*.

2. A small vesicle forms in the *stratum mucosum*. This vesicle occurs only in relation to the ducts of the sweat glands, and affects only a proportion of these. It may be produced in the following ways. (*a*) By an actual cystic distension of the sweat duct as it passes through the mucosal layer. (*b*) By a rupture of the same part of the duct and a thrusting asunder of the mucosal cells immediately surrounding it. In this instance, the ruptured duct continues to pass through the centre of the vesicle so formed. (*c*) By a combination of both methods. The changes that occur are shown diagrammatically in Figure I. The vesicle often contains a residual network composed of the stretched mucosal cells and the distorted and disrupted walls of the sweat duct. Where the vesicle forms outside the duct, a direct communication can be detected between the duct lumen and the vesicular space.

3. Surrounding the duct as it passes through the papillary layer of the derma (*cutis vera*) is a collection of lymphocytes, scattered monocytic cells and very widely dilated lymph channels. This collection of cells and lymph vessels is immediately beneath the vesicle and is in the form of an inverted cone. Communication can be seen between the vesicular space and these lymphatics.

4. The lumen of the entire dermal part of the duct is dilated to two or three times its natural size.

5. The convoluted sweat gland acinus is moderately distended and the secreting cells show varying degrees of distortion and atrophy. There are a few scattered lymphocytes surrounding the gland.

6. There is a considerable accumulation of tissue fluid in the tissue spaces of the entire skin, and all the dermal lymphatics are dilated. This lymphatic engorgement is pronounced around the sweat glands and their ducts and is maximal under the vesicle.

7. Contrasted with the lymphatic engorgement there is only a moderate degree of blood vascular congestion in relation to the sweat glands and their ducts.

Microscopic Changes in the Hair Follicles and Sebaceous Glands.

The outlet for the sebum is blocked by a layer of mature keratin, which surrounds the hair as it emerges on the skin surface. The blockage is due to a proliferative lesion, as is the case with the sweat glands. The result is obstructive folliculitis, and an atrophic hair floats in a lake of sebum. The neck of the sebaceous gland is dilated, but the gland itself is only mildly affected. Acute inflammatory signs and vascular congestion are absent.

Tentative Interpretation of the Lesions.

It is considered that the occluding hyperkeratoses are the basic cause of the histological changes and consequently of the entire syndrome. The hyperkeratoses are the result of previously occurring *miliaria rubra*.

As a sequel to the blockage pressure is built up within the gland and duct. These are secondarily affected, dilatation of both results, and in the case of the gland partial but not complete pressure atrophy of the secreting cells occurs. The sweat under pressure, after causing maximal distension of the mucosal part of the duct, finally bursts through the walls of the latter and forms the vesicle. The dilated lymphatics, especially those beneath the vesicle, are probably concerned in reabsorbing the escaping sweat. The sweat is then carried to the local lymph glands, which as a consequence become enlarged.

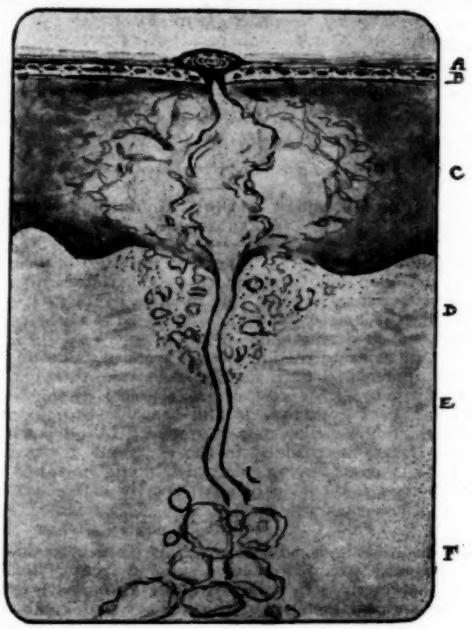

FIGURE I.

Diagram of changes. A: *Stratum corneum* with obstructing keratosis. B: *Stratum granulosum*. C: *Stratum mucosum* with vesicle. D: Lymph channels and inflammation. E: Dilated duct in dermis. F: Distended atrophic gland.

It is clear that the sweat is still formed, but that, instead of reaching the skin surface for its cooling effect, it is reabsorbed into the lymphatic system. There is thus a suppression of sweat rather than a primary failure of secretion. To put it another way, a curious but futile internal circulation of the sweat occurs.

Inability to lose heat owing to the lack of the cooling effect of sweat evaporation is partly responsible for the symptoms and general signs observed. However, it at present seems very likely that the internal circulation of the sweat is as important a factor as the interference with heat regulation. Considerable and accumulating evidence in support of this interpretation of the disease will be detailed at a later date. The implication of the changes in the sebaceous glands is not understood. Neither is it known whether such changes occur before those in the sweat glands.

Summary.

A tropical disease involving anidrosis and general symptoms is described.

Histological changes are briefly outlined and a suggested partial explanation of the syndrome is indicated. The name "tropical anidrotic asthenia" is suggested.

Acknowledgements.

Our thanks are due to the Director-General of Medical Services for permission to publish this report. Our thanks are also extended to Lieutenant-Colonel J. Halliday, officer commanding the medical division of the hospital.

AN EXAMINATION OF A PUBLIC HEALTH REGULATION GOVERNING SCARLET FEVER.[1]

By R. J. JACKSON,
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THE purpose of this ten-minute paper is twofold, namely: (*a*) to focus attention on a regulation made in accordance with the provisions of the *Public Health (Amendment) Act*, 1921, of New South Wales and published in *The New South Wales Government Gazette* of December 15, 1922—a regulation that determines the period of exclusion from school of pupils suffering from scarlet fever as well as the period of exclusion from school of pupils exposed to infection; (*b*) to gather the views and experiences of medical practitioners from towns other than Armidale in the area of the Northern District Medical Association.

The relevant schedule "L" of the Act includes the following section[1]:

> Scarlet Fever, also called Scarlatina.
>
> Patients.—Period of exclusion from school.
>
> For at least six weeks from the date of onset of the disease, and until he is free from obvious peeling of the hands, and discharges from the ears and nose.
>
> Contacts.—Period of exclusion from school.
>
> 1. If a school pupil is treated at home, until the patient is entitled to return to school. In the case of other home-treated patients not attending school, until ten days after the recovery or death of the patient, and subsequent disinfection of the premises; or
>
> 2. If a patient is removed to the hospital, or dies, until ten days after disinfection of the premises subsequent to removal of the patient; or
>
> 3. If the pupil has been in any infected premises until ten days after such exposure.

The practice of Armidale doctors over the past fifteen years has been as follows: (*a*) to admit all scarlet fever patients to hospital; (*b*) to regard four weeks from the appearance of the rash as a safe quarantine period for patients, unless at the end of that time the complication of aural or nasal discharge is still present (continuing desquamation is not regarded as dangerous); (*c*) to regard ten days as the safe quarantine period for child contacts; (*d*) to advise an elastic quarantine period for adult contacts, particularly bread-winning fathers and grocery-shopping mothers.

Prior to 1928 our practice in the quarantining of patients had been to insist on the minimum of six weeks. The decision to reduce this period to four weeks was made when it was learned that four weeks were the recognized routine period at the Coast Hospital—as the Prince Henry Hospital was then called—which was accepted as the most reliable authority in New South Wales to set this standard. Over the past fifteen years I know of no patient discharged from hospital in four weeks who could be convicted as the source of transmission of scarlet fever to others.

The teaching of Dr. F. V. Scholes, Medical Superintendent of the Queen's Memorial Infectious Diseases Hospital, Fairfield, Victoria, is set out in his book, "Diphtheria, Measles, Scarlatina". This is what he has written[2]:

> We must now discuss the date at which the patient may be pronounced free of the disease [scarlatina], ready for his final clearing up and re-entry into society. Unfortunately, this is a very difficult matter to settle.
>
> The only way to come to any conclusions is to start from some definite basis. Let us start then from these two basic principles:
>
> (*a*) The means by which scarlatina is transmitted, in the later stages, consists in the discharges from the throat, nose and ears.
>
> (*b*) Late desquamation of itself is not infectious, and it is so only as a result of contamination of the skin by the above discharges.
>
> At first sight, then, the acceptance of these two principles implies:
>
> (*a*) That provided the nose, throat and ears are healthy, then any convalescent patient, given a good disinfectant bath, may be discharged as reasonably free from infection.
>
> (*b*) That any convalescent patient with discharge from the nose, throat or ears must be regarded as possibly infectious until such discharge ceases.
>
> The absence of streptococci from the discharges might be regarded as evidence of non-infectivity, and their presence as a reason for further detention. We have, of course, no quick means of recognising the streptococcus scarlatinæ when we see it, and on that account I do not release patients if swabs of their discharges show streptococci.
>
> As a matter of fact, we have not progressed far beyond the two conclusions mentioned, but in practice we cannot accept them fully.
>
> Firstly, the danger of nephritis must be thought of, and this will necessitate the keeping of the patient in bed for three weeks, and under observation for at least three and a half weeks. Nextly, otitis media and adenitis of convalescence are apt to arise during the fourth week, so that, in practice, you will be wise to adopt a minimum of four weeks as a period of detention and observation. If at the end of that time there have been no untoward symptoms, and the mucous surfaces are healthy, the patient may be given a disinfectant bath and discharged, without any regard for the presence of late desquamation.

An English authority, Dr. William Gunn, medical superintendent of a London County Council hospital, who contributed the section on scarlet fever in "The British Encyclopædia of Medical Practice" published in 1938, has made this statement[3]:

> Infectivity. For many years six weeks was considered the minimal period of detention, but in the last decade or so this has generally been reduced to four weeks without any increase in the incidence of return cases. On the contrary the rate has tended to decrease, probably as the result of the diminished opportunity for re-infection by the shorter stay. A further reduction to three weeks appears to be justified in adults, but not in children.
>
> Quarantine. The recognised quarantine period is seven days. It is usually unnecessary to impose a strict quarantine in school and hospital ward outbreaks unless there has been a succession of cases. Supervision of contacts and exclusion of suspected cases and carriers have established themselves as adequate measures in ordinary circumstances.

Thus there is ample authority in precept and practice for the contention that the public health regulation in New South Wales requiring the exclusion of a scarlet fever patient from school for at least six weeks is not abreast of medical progress. It is unquestionable that a public health regulation must be conservative if it is to be effective in safeguarding and maintaining at a high level the health of the people; but it is questionable whether this twenty-one-year-old regulation is not now so conservative that it lags far enough behind established medical practice to have become not only an embarrassment but even a hindrance. For example, during this past week six boys from an Armidale college have been barred by this regulation from sitting for their Intermediate Certificate Examination, though their doctor was prepared to certify them as free of infection after spending a period of four weeks in the isolation section of the Armidale District Hospital and being free of all complications. An analysis of the total number of cases[4] of scarlet fever occurring in the Municipality of Armidale from 1912 to December, 1943, reveals that for the sixteen-year period from 1912 to 1927 there were 247 cases—an annual average of 15·4—and for the period 1928 to 1943 there were 209 cases—an annual average of 13·1. Very conservatively it may be deduced, therefore, that since the reduction of the quarantine period to four weeks in Armidale medical practice there has been, at least, no increase in the number of cases occurring each year.

It may be stated here that in 1937, in a residential hostel for women students, where there were 130 women aged from seventeen to twenty-one years attending a tertiary educational institution, one isolated case of scarlet fever occurred. No quarantine was imposed and no cases followed.

The regulations of the Department of Public Instruction contain no provision for the exclusion of a teacher from school, even though he may be a contact of an infectious patient. "It may seem anomalous not to exclude teacher contacts", it is stated,[5] "but it is rare to find teachers infected by children, and very rare indeed to find children infected by a teacher." It is added, however, that "it is most important in these legally 'infectious diseases' for the teacher to exercise great care and tact not to offend local opinion by his freedom".

[1] Read at the annual meeting of the Northern District Medical Association (British Medical Association) on December 5, 1943, at Armidale.

Further evidence could be introduced, but sufficient has been presented to justify the claim that the legal quarantine period for scarlet fever could with safety be reduced from six to four weeks.

The first purpose of this paper has now been effected. It now remains to achieve the second—namely, the collection of the views and experiences of medical practitioners from towns other than Armidale in the area of the Northern District Medical Association.[1]

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(2) F. V. G. Scholes: "Diphtheria, Measles, Scarlatina", Second Edition, 1927, page 311.
(3) W. Gunn: "Scarlet Fever", in "The British Encyclopædia of Medical Practice", Volume XI, page 19.
(4) Official Records of the Health Surveyor of the Armidale Municipal Council.
(5) "The Education Gazette", New South Wales, Volume XXXV, Number 3, March, 1941, page 50.

Reviews.

MEDICAL PHYSICS.

TEXTBOOKS on physics in medicine have appeared from time to time, but most were limited in scope and rather given to over-emphasis of the authors' own special studies; besides, they are now very much out of date. Here at last is a big cyclopædia covering the subject, entitled "Medical Physics" and published by the Year Book Publishers, Incorporated, of Chicago.[2] In 1,744 quarto pages the many applications of physics to medicine are dealt with by 251 contributors. As in Glazebrook's "Dictionary of Physics", the subjects are taken in alphabetic sequence, but are grouped in a table of contents under the headings anatomy, bacteriology, biometrics, biophysics, dermatology, hæmatology, medicine, neurology, nuclear physics, ophthalmology, optics, orthopædics, otolaryngology, pathology, pædiatrics, photography, physical chemistry, physical therapy, physics (instruments and methods), physiology, radiology, surgery and urology. It is quite beyond the powers of any one person to traverse this wide domain and assess the value of each separate component; all he can do is to examine with care those subjects in which he has some special knowledge and about which he can give a measured opinion and apply his findings to the treatise as a whole. Using this method we have no hesitation in describing the monumental treatise under consideration as a useful contribution to the literature of medical science; the book will certainly be acquired by every medical library and by many general libraries, and separate copies will no doubt be secured by individual departments in universities and research institutes.

Having made this statement we must in honesty declare that there are serious blemishes.

1. It is rather an American failing to give a carefully compiled list of hypotheses or investigational procedures without any obvious gradation of emphasis, that is, without the critical discrimination which is so useful in the guidance of the reader.

2. There are several omissions; for example, the Coriolis force to which German physicists have given so much attention in the last fifteen years and which has been applied by them to problems in aviation medicine is passed by. There is no mention of interferometry, though various diffraction methods are well described. Whilst vision is dealt with in detail, the physiology of the ear is ignored except for a wordy article on audiometers and hearing aids.

3. When the number of contributors is large it is inevitable that there should be lack of proportion in the allocation of space. The treatment of colloids is far too skimpy, whilst the subject of isotopes is generously and admirably handled. The arterial pulse gets two and a half pages of quite inadequate description, whilst monomolecular layers have 19.

4. A fair fraction of the subjects has no right to be included in a work on applied physics. Tissue culture is given eleven and a half pages, but one looks in vain for any physical association; there are articles on such topics as prostatic massage and spa therapy which ought not to be there. Much of the pathology has been dragged in without justification. Indeed the book could be reduced to one-third of its size with advantage to the eye and brain of the reader and the purse of the purchaser.

5. The American publisher has every right to produce an American book. Of the 251 contributors, all with the exception of a Saskatchewan professor are residents in the United States with New York, Ohio and Illinois preponderating. A very cursory glance at the table of contents will show that several subjects have been entrusted to men far lower in standing than their counterparts in other countries and the book suffers in consequence. There is, however, something much more serious than this. The non-American reader of whatever section will soon discover that British science has not been fairly treated; it is not merely that American work gets the emphasis, but an absence of reference to work emanating from the British Empire is all too obvious.

National pride and even national prejudice have their place; at any rate they are unavoidable in many aspects of human endeavour, but they should not enter science. An example of this is seen in the description by Paul Rothemund of the new technique of chromatography to which British biochemists have made such notable contributions; but in the list of references Britain is conspicuous by its absence.

About a certain class of new book one can say that it well fulfils its avowed function and precludes for some time to come the writing of a competitor. One cannot make the same assertion about this American treatise; rather it is a challenge to the British Empire, and it is to be hoped that one of the great publishing houses in Britain will bring out a medical physics less cumbersome, less parochial, more inspiring and more useful.

OBSTETRICS AND GYNÆCOLOGY.

THE fourth edition of a "Combined Textbook of Obstetrics and Gynæcology" by the Scottish school of teachers headed by Munro Kerr maintains the high level of earlier editions.[1] It commences with an excellent account of the anatomy and physiology of the genital tract. In the treatment of the toxæmias of pregnancy, when no improvement has been noted, there is a tendency to advocate continuation of the pregnancy for longer periods than have been shown to be advisable in surveys of the remote effects of such toxæmias. The Stroganoff method of treating eclampsia is advocated. The section on organic diseases associated with pregnancy is well written. Anæsthetics and analgesics, as well as the recent advances in blood transfusion, including work on the Rh factor, are adequately described. The influence of the senior author is clearly seen in the chapters on the treatment of dystocia—one of the best sections in the book. Puerperal infections could have been described in more detail. The disorders of the infant and the difficulties of breast feeding are well described. There is a valuable chapter on the causes and factors influencing maternal mortality and morbidity.

Gynæcology has been adequately treated for the student. Disorders of function have been brought up to date, and in particular praise must be given to the section on the investigation and treatment of sterility. The authors have deliberately refrained from giving minute details of surgical technique and what has been written is sufficient for students. The book ends with a section on radiology in obstetrics and gynæcology with many illustrations. This book, which is a credit to the British school of obstetrics and gynæcology, can be warmly recommended to both students and general practitioners who require a text-book with adequate descriptions of diagnosis and treatment.

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[1] Discussion which followed the reading of this paper ended in a resolution of the meeting authorizing an approach to the Council of the New South Wales Branch of the British Medical Association to consider the practicability of making the proper effort to have the regulation altered.

[2] "Medical Physics", edited by Otto Glasser, Ph.D., associated with many others; 1944. Chicago: The Year Book Publishers, Incorporated. 10½" × 7½", pp. 1787, with illustrations.

[1] "Combined Textbook of Obstetrics and Gynæcology: For Students and Medical Practitioners", revised by J. M. Munro Kerr, LL.D., M.D., F.R.F.P. and S. (Glasgow), F.R.C.O.G., R. W. Johnstone, C.B.E., M.A., M.D., M.R.C.P., F.R.C.S. (Edinburgh), F.R.O.C.G., James Hendry, M.B.E., M.A., B.Sc., M.B., F.R.F.P. and S. (Glasgow), F.R.C.O.G., Dugald Baird, B.Sc., M.D. (Glasgow), D.P.H. (Edinburgh), F.R.C.O.G., James Young, D.S.O., M.D., F.R.C.S. (Edinburgh), F.R.C.O.G., Donald McIntyre, M.B.E., M.D. (Glasgow), F.R.F.P. and S. (Glasgow), F.R.C.S. (Edinburgh), F.R.C.O.G., F.R.S.E., E. Chalmers Fahmy, M.B., F.R.C.P., F.R.C.S. (Edinburgh), F.R.C.O.G., with additional contributions by Charles McNeil, M.A., M.D., F.R.C.P. (Edinburgh), and G. Jackson Wilson, M.B. (Glasgow), D.P.H. (Cambridge); Fourth Edition; 1944. Edinburgh: E. and S. Livingstone. 9½" × 6", pp. 1238, with many illustrations, some of which are in colour. Price: 42s. net.

The Medical Journal of Australia

SATURDAY, SEPTEMBER 23, 1944.

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PSYCHOSOMATIC SURGERY.

WHEN a patient has to be subjected to surgical operation it is, of course, necessary that the procedure shall be undertaken with skill and dispatch. These two requirements are commonly recognized to call for certain qualities and attainments in the surgeon—ability to make a decision and to act upon it, if need be, without delay; a knowledge of technique and a readiness to vary the steps of the chosen method to meet the requirements of the individual case; gentleness in the handling of the tissues; and so on. But the operation, central focus of surgical treatment though it may be, is not everything. Expert and even renowned surgeons have been known to remark in days of not so long ago that provided the operation was properly done, you might do almost anything you liked to the patient afterwards. Such a view is dangerous if it is expressed before those who are training to become surgeons, and it is quite likely that those who have made the remark did not look upon the operation as the be-all and end-all of treatment, but did all else that was needful without making much fuss about it. If the human body was built of standardized parts, like, for example, a "Ford" motor-car, the old "Tin Lizzie" of hallowed memory, and if it functioned, if it "ran", just as a standardized machine runs, the surgical operation might justifiably occupy the whole of the surgeon's attention. But the body is not a machine, in the common acceptance of the term; its response to a certain stimulus is not always predictable in the case of one individual, and in certain circumstances may be capricious. Practitioners of medicine know that it is the patient whom they should treat and not his disease, though this is not always clear from the clinical jargon that is so often heard—doctors say that they have so many cases of influenza under treatment, or in the matter of diagnosis they may refer to a patient and say that "he turned out to be a pneumonia". During recent years increasing emphasis has been laid on the mental factor in disease—on the effect which the infection may have on the patient's psyche and on the way in which the patient's mental make-up may influence the manifestations of disease. To this special study the name psychosomatic medicine has been given. Though strictly speaking the term is not necessary, since the study of disease in an individual should always include the whole man, mind as well as body, its use may be encouraged in the hope that the whole man will always be covered by the investigation. What are known as surgical diseases do not differ essentially from so-called medical diseases except in the fact that they are treated by surgical methods. Hence we may speak also of psychosomatic surgery.

The subject of psychosomatic surgery is worthy of discussion on account of the prominent place taken by operation in surgical treatment, and because the surgeon may forget that, in spite of the special methods that he uses, he is, like his colleague the physician, a student of internal medicine and must view disease in the same all-embracing way. Reference to this subject is appropriate at the present time in view of an address that was delivered in December last to the Southern Surgical Association, United States of America, by its president, Barney Brooks.[1] Pointing out in the early part of his address that new methods employed before and after operation have made it possible to perform operation with far less risk than formerly and have extended the usefulness of surgery for the relief of conditions previously unknown or believed to be irremediable, Brooks states that it is his purpose to inquire into the effect of this advance in knowledge in the realization of the fundamental purposes of surgery. These purposes are the prolongation of life, the removal of disabilities and the relief of suffering. Brooks expresses the third of these purposes in remarkable language: "the relief from an unfavorable balance in the pain-pleasure principle in those individuals receiving surgical treatment". In its early days surgery was objective, anatomical, and for the most part destructive. Surgeons received their preliminary training in anatomy. The immediate result of the discovery of methods of anæsthesia and asepsis was, Brooks remarks, only to increase the number and scope of operations based on factors which were purely anatomical. He then points out that during the past twenty-five years and particularly during the past ten years there has been a great advance in knowledge applicable to surgery which can best be said to belong to physiology. Most medical folk will agree with Brooks that although surgeons have become physiologists as well as anatomists, the essential philosophy of the surgeon is still for the most part materialistic. "Water, sugar, sodium chloride, proteins, carbon dioxide and even hydrogen ion concentration are", he states, "just as real as muscle tendon or nerve." But there is, he continues, "a fundamental difference between the old anatomical surgeon and the modern physiological surgeon, in that the latter has opportunities for being what, for lack of a better term, we might call constructive". The addition of a physiological concept into surgery brought with it the idea that certain departures of an individual patient from what might be regarded as a standard human being might be made good or compensated for in order to improve the individual's well-being or to increase his chances of survival after some major anatomical alteration. Brooks observes that all the methods of obtaining a better know-

[1] *Annals of Surgery*, March, 1944.

ledge of the abnormalities of anatomy and physiology are impersonal and that a great deal of effort is expended by young surgeons in collecting information about individual persons or groups of persons, but that these young surgeons do not become fully acquainted with the real person, his social position, ambitions, anxieties and other intangibles. Here we have the kernel of psychosomatic surgery. Different types of medical men have widely divergent views on psychiatry and what psychiatrists have as their methods and their aims. The different schools of thought on the basis and practice of psychiatry (Brooks mentions them) do not really matter when we discuss such a subject as psychosomatic surgery. What is needed is an appreciation of the psychic aspect of disease. It may be, as Brooks suggests, that a better understanding of the mind in disease may be one of the results of the present war—and it is to be hoped that he is right. But surgeons, like all other practitioners of medicine, have at present plenty of evidence in their daily lives that an abnormal state of the mind may of itself produce in certain types of person a condition not readily distinguishable from organically produced disease. And every practitioner knows that the extent to which the mind exerts its effect may be great or small. In this regard Brooks has undertaken an unusual experiment. In order to demonstrate to his students the operation of the central nervous system, he introduced a psychiatrist and a psychologist into the surgical wards. It is interesting to note that all but two of the ward patients cooperated, but in the wards the psychiatrist and psychologist were not labelled as such—they were in fact encouraged to pose as members of the surgical staff. This could not be done with the private patients, who refused in most cases to agree to a consultation with a psychiatrist—an understandable reaction. For one year all the ward patients were "exposed to a psychiatrist", and 64 patients were subjected to complete psychological study, except for psychoanalysis. Among fourteen consecutive patients operated on for acute appendicitis and found to have an acute inflammatory process in the appendix, there were seven who had evidences of anxiety of sufficient gravity to be of clinical significance. In two cases in which the signs and symptoms indicated acute appendicitis, no organic change was found in the appendix, the clinical manifestations being in reality those of neurosis.

These findings—and there were others which we need not follow—will occasion no surprise for any surgeon of experience; but for the sceptical and inexperienced they show the importance of a clinical examination complete in every respect. The surgeon who is called to operate on a patient, never having seen the patient before, is at a disadvantage and may find it difficult to gain a true estimate of what may be called the balance between the mental and the physical in the patient's condition. This is why in such circumstances it is to the advantage of the patient that there should be a consultation between the surgeon and the patient's regular medical attendant; especially is this true if the illness is acute and the surgeon has little opportunity to study the patient as an individual. On these grounds, too, a cogent argument can be raised for the cooperation of the regular attendant in the post-operative treatment. At the root of the whole matter is the training of the student. Those who heard Professor F. Wood Jones some years ago deliver an oration in Melbourne on "The Master Surgeon" will recall his insistence that human psychology—"as distinct from much of the modern outpouring of psychological literature"—is insufficiently taught in medical schools. He had something to say about patients who came to operation for purely psychological reasons, and on the performance of safe but entirely unnecessary operations. He also suggested in the course of his argument that it was possible to give every student such a good general medical education that he would go far towards understanding the nature and needs of those seeking his help. We may, if we care to look for it, find a philosophical basis for application to our *Anschauung*, our contemplation, of patients and their diseases. Professor Wood Jones discussed this in his Bancroft Memorial Lecture on "The Changing Point of View", published in this journal on August 29, 1931. He described "the great intellectual quest of all mankind"—the need to see things steadily and to see them whole.

Current Comment.

SANDFLY FEVER.

IT is fortunate that some of the slighter of the infectious diseases of tropical areas have not had more serious military results. The general group of diseases including dengue fever and sandfly fever can be most troublesome if epidemics of any magnitude occur, for, though they are entirely non-serious from the medical viewpoint, they cause great prostration and weakness. In the Middle East during this war Australian troops were extensively affected by sandfly fever, and later on in the south-west Pacific area and in northern Australia dengue fever was also a cause of considerable loss of valuable time. Sandfly fever is the more difficult to control, for the vector is so tiny and unobtrusive; in fact it is seldom seen by many of its victims, and breeding is not easy to prevent over large more or less settled camp areas. At least one Australian medical unit, we are told, planned to carry out some experimental work on the disease, but this was not found possible chiefly owing to the large amount of work imposed by the outbreak of sandfly fever in bulk, affecting the medical personnel no less severely than others.

A. B. Sabin, C. B. Philip and J. R. Paul have contributed a valuable article on phlebotomus fever, in which they summarize existing knowledge and communicate some preliminary account of original research.[1] The symptomatology is well known, though it may be pointed out that it varies in different epidemics and areas, even though the infective agent is apparently precisely the same. This mutability of the clinical picture is common to all infectious disease; it is a particular feature of the dengue group, with which phlebotomus fever has strong affinities. Sabin, Philip and Paul confirm the now well-established knowledge concerning the vector, the *Phlebotomus papatasi*. The findings are as follows. They succeed in transmitting the disease to volunteers by bites of sandflies bred in the laboratory and allowed to feed on other volunteers inoculated with the serum virus. Sandflies caught in a region where the disease had not recently appeared failed to transmit the infection. About a week elapses after the sandfly has fed on infective material before it can transmit the disease. All attempts to transmit the disease by mosquitoes (including the *Aëdes ægypti*, vector of dengue) failed. The disease could not be produced in laboratory animals, but could be transmitted to human volunteers by inoculation of serum from spontaneously arising cases. Certain difficulties arise in experimental work with this disease owing to the lack of any reliable confirmatory test. Attempts were made to devise a satis-

[1] *The Journal of the American Medical Association*, July 1 and 8, 1944.

factory test, by use of the precipitin and complement-fixation methods and also skin tests, but none of these met with success. The clinical picture of the disease is characteristic, though not always convincing in research work, but it was considered that the appearance of characteristic symptoms in the persons subjected to experiment together with the finding of leucopenia with a relative and absolute neutropenia, and a relative and absolute increase in immature neutrophile cells, clinched the diagnosis. In Sicily an outbreak of sandfly fever occurred at a time when the vector of dengue was prevalent as well as the sandfly, and even though the rarity of lymph gland enlargement and of a rash made dengue less likely, the diagnosis was certainly established only by experimental proof. It was shown that the fever could be reproduced in volunteers from serum of patients and that this disease was identical with that produced by virus transmitted experimentally by sandflies. Further, mosquitoes failed to transmit the infection, and cross immunity was demonstrated between the Sicilian virus and the Palestine virus. It was found that people who had recovered from an experimental attack of the disease were immune for a least four months.

Sabin and his associates were able to pass the virus in series seven times from man to man without alteration in its properties. It was found that subcutaneous or intramuscular injection of infected serum did not always succeed in transmitting the disease, but intracutaneous and intravenous injection practically never failed. The success of the intracutaneous route is interesting when one remembers the minute size of the vector. The size of this tiny nuisance is also relevant when one considers that up to 1,000 infective doses were demonstrated to be contained in one cubic centimetre of serum. It has always been thought that the virus was passed on from the fly to the eggs and thus to a new generation. No confirmation could be obtained of this, but it is pointed out by the authors that this passage may occur in a sufficient number of cases to allow perpetuation of the disease in this manner. No virus was demonstrated in the cerebro-spinal fluid. Experiments with membrane filters point to the size of the virus being probably not larger than forty millimicrons, and it is thought likely that it may even be smaller, and perhaps fall within the same range of magnitude as the yellow fever virus. No success attended attempts to grow the virus on the chorio-allantoic membrane of chick embryos.

Sabin and his co-workers lay down the usual prophylactic measures, including selection of well-located sleeping quarters, freeing of their neighbourhood of areas which harbour the fly, oiling the ground, the provision of fine nets, the avoidance of unnecessary fixtures and hiding places for the flies. How difficult these ideals are to realize all know who have had practical experience. But in addition Sabin and his collaborators offer the more practical suggestions of the use of the pyrethrum bomb spray and the modern repellent creams. Lastly, their observation that the virus irradiated by ultra-violet light is incapable of causing the disease, but capable of producing immunity, may be of value in the future. For though it is a non-fatal disease with no sequelæ, sandfly fever is undoubtedly, as Sabin, Philip and Paul call it, a disease of military importance.

THE TREATMENT OF PNEUMOCOCCAL MENINGITIS.

IT is cheering to be able to consider as at all practical such a subject as the treatment of pneumococcal meningitis. Seven years ago the mortality rate was so high as almost to place the disease amongst the incurable infections. Sulphonamides altered the picture completely, but there has been a tendency recently to look to penicillin as the certain cure. Recent series published in various parts of the world, including Australia, show what great help the sulphonamides can give, and the present position seems to be that both preparations have their place. Following on the initial work by Florey and Cairns last year, pneumococcal meningitis has been treated in England at a military hospital for head injuries, and H. Cairns, E. S. Duthie, W. S. Lewin and H. V. Smith now present some of their results.[1] They refer to the work of Florey and others which showed that penicillin did not pass from the blood to the cerebro-spinal fluid, but was quite innocuous to the tissues when introduced into the theca. Their report is a preliminary one and covers the results of study of eight cases in which penicillin was used and special attention paid to the questions of dosage and route of administration.

Both sodium and calcium salts have been used intrathecally, concentrated solutions of about 5,000 units per cubic centimetre being made in distilled water, filtered, assayed and diluted to a strength of 250 to 500 units per cubic centimetre. No evil effects have followed repeated daily injection of these solutions into the lateral ventricles or the lumbar subarachnoid space. Usually 3,000 to 4,000 units were given in each injection. The total amount injected intrathecally varied from 10,000 to 85,000 units, though higher dosage might be needed in complicated cases. The cisternal route was not used at all in this series. There were two fatal cases, and in these a subarachnoid block occurred, one in the lumbar space and the other in the aqueduct of Sylvius. In neither of these could cisternal puncture have helped, and the authors also feel that it is better to refrain from introducing high concentrations of penicillin in the region of the brain stem. In addition to this medication intramuscular injections were given in three cases. In these there were other systemic infections, such as bronchopneumonia, sinusitis and a purulent pachymeningitis. It is pointed out by the authors that it is not yet proved that small quantities of penicillin may not be able to pass the chorioidal barrier when local inflammation exists. Tests of the penicillin level in the cerebro-spinal fluid proved that twenty-four hours after the introduction of penicillin into the fluid a very satisfactory level still persisted, sufficient in fact to provide ten times the amount needed to inhibit completely a sensitive pneumococcus. The diffusion rate of the penicillin through the cerebro-spinal fluid varied greatly, but the impressions of these writers are that in certain severe general or focal infections it may be wise to use both ventricular and lumbar routes.

The question of reactions from intrathecally administered penicillin is interesting. Patchy erythema with slight general disturbances occurred in some cases, and in one instance a severe and indeed alarming reaction followed intraventricular injection. Such reactions depend on the degree of purity of the sample, and it is advised that each new batch of penicillin should be used intrathecally with caution until its reactive properties are determined.

Eleven patients suffering from pneumococcal meningitis were seen in this series: of these, three were moribund and died within a few hours of the beginning of treatment. Eight patients were thus fully treated: of these, six recovered completely. One recovered from the meningitis, but died later from subdural abscess, and another likewise succumbed later to a brain abscess. In six cases of the eight sulphonamides had previously been given with relief, but either toxic symptoms appeared or pneumococci still persisted in the cerebro-spinal fluid. It is suggested that it might be wise to combine intravenous or intramuscular administration of penicillin with intrathecal treatment in all cases, as the experience of Cairns and his co-workers is that it is difficult to be sure that the only purulent lesions are within the leptomeninges. They think, too, that the two fatalities might have been avoided had the intraventricular route been used as well as the lumbar. So far they have treated in all, in this series and others, sixteen patients, and they are convinced of the essential value of penicillin in this very dangerous condition. They propose in the future to use sulphadiazine as well as penicillin.

It will be seen that to attain the best results a highly skilled team is desirable, but even if such ideal handling cannot be available to all, the prospect of cure is yet good even if penicillin is given by the lumbar intrathecal route.

[1] *The Lancet*, May 20, 1944.

Abstracts from Medical Literature.

THERAPEUTICS.

Mercurial Diuretics.

M. FRIEDENSON (*Annals of Internal Medicine*, February, 1944) describes a case of chronic congestive heart failure in which 627 injections of mercurial diuretics were given over a period of twelve years. "Salyrgan", "Mercupurin", "Neptal" and "Esidrone" were the drugs employed in doses of one or two cubic centimetres; most injections were given intravenously, though intramuscular injection seemed equally effective. Suppositories caused some diuresis, but were not so efficient as injections. No ill effects were noted, and the drug continued to cause satisfactory diuresis when given once or twice a week. Maintenance diuretics were given almost continuously, urea (50 to 70 grammes daily) and ammonium nitrate (six to nine grammes daily) being most effective. Abdominal paracentesis was performed 59 times. The author refers to other cases in which administration of "Novasurol", "Salyrgan", "Mersalyl" or "Mercupurin" was continued once a week for three to eight years without toxic effects.

W. MODELL (*ibidem*) discusses the optimal dose of mercurial diuretics. Doses of 1·0 or 2·0 cubic centimetres of "Merbaphen", "Mercupurin" or "Salyrgan" are used in congestive heart failure to promote diuresis, when œdema is a feature of the condition. In the author's investigation ambulatory patients with chronic congestive heart failure were treated with "Mercupurin". Injection of 0·5 cubic centimetre produced little diuresis, 1·0 cubic centimetre caused a diuresis estimated by weight loss of approximately five pounds, and 2·0 cubic centimetres induced weight loss of 6·4 pounds. Ingestion of ammonium chloride (dose not stated) increased the diuresis usually by about 15%, but sometimes by a much greater amount. Two injections of 1·0 cubic centimetre per week produced a weight loss of 7·3 pounds, as compared with six pounds' loss after 2·0 cubic centimetres given once a week. A comparison was made between intravenous and intramuscular injection of 2·0 cubic centimetres of "Mercupurin". Notable reactions were observed in two patients after intravenous injection, flushing, chilliness, giddiness, weakness and cramps in the legs being noted.

Caudal Anæsthesia.

J. M. SIEVER (*The Journal of the American Medical Association*, June 3, 1944) describes caudal anæsthesia in management of labour. Twelve hundred pregnancies are reported. Procaine hydrochloride 1·5% solution was injected into the caudal canal in a dose of 25 cubic centimetres at the commencement, then a number 4 French nylon ureteral catheter was passed through the needle and procaine was allowed to run in by continuous drip at the rate of 20 cubic centimetres per hour. The author states that the level of anæsthesia may be controlled by alteration of the rate of drip. A barbiturate and three-eights of a grain of ephedrine are prescribed before the local anæsthetic solution is introduced. There were 32 fœtal deaths in the author's 1,200 cases; fourteen babies were premature and died, twelve were stillborn, four were monsters and two died from cerebral hæmorrhage.

Treatment of Gonorrhœa.

H. C. OARD, E. V. JORDON, M. NIMAROFF AND W. J. PHELAN (*The Journal of the American Medical Association*, June 3, 1944) record some results of treatment of gonorrhœal urethritis with sulphonamides and penicillin. Patients resistant to repeated courses of sulphathiazole and sulphadiazine, treated with 10,000 Oxford units of penicillin sodium injected into muscle every three hours, were cured clinically and bacteriologically within twenty-four hours. The dose of penicillin was reduced owing to scarcity of supplies and 50,000 units as a total dosage was found to effect a cure in 72 out of 73 sulphonamide-resistant cases. It was found that 50,000 units of penicillin alone failed to cure 15% of patients. In the meanwhile it had been suggested that addition of small amounts of penicillin enhanced the effect of sulphathiazole against staphylococci. A further series of 232 patients with gonorrhœal urethritis were treated with 2·0 grammes of sulphathiazole every six hours for one day, followed by 1·0 gramme every six hours and 10,000 units of penicillin into muscle every three hours during the second day, until 50,000 units had been given. Of these patients 96% were cured clinically and bacteriologically within three or four days. Those who were not cured were at once treated with 100,000 units of penicillin alone; all were promptly cured.

Barbiturate Intoxication.

B. W. BILLOW (*The Journal of Laboratory and Clinical Medicine*, March, 1944) discusses barbiturate intoxication and picrotoxin treatment. There were 300 suicides due to barbiturates in the United States of America in 7,936, and the number is increasing. The symptoms may be confusion, ataxia, vomiting, difficulty in swallowing and motor excitement. Coma, shallow rapid respiration, fixed miotic pupils, absent corneal and other reflexes, thready pulse and low blood pressure should suggest barbiturate poisoning. Picrotoxin, the active principle of several plants, notably *Anamirta paniculata* or "fish berries", is an antidote for barbiturate poisoning. It stimulates the medullary and cortical centres, especially the respiratory and vasomotor and the autonomic centres. If injected intravenously it disappears rapidly from the blood and tissues within two hours. One milligramme of picrotoxin is said to be an antidote for 30 to 40 milligrammes of pentobarbitol sodium. The author records a case of a twenty-four year old nurse who swallowed three grammes of pentobarbital sodium ("Nembutal"), considered a lethal dose. She was first seen in deep coma; the pulse was thready; the pulse rate was 124 per minute; the systolic blood pressure was 90 and the diastolic pressure was 50 millimetres of mercury; the temperature was 96·4° F. Six intravenous injections of "Coramine", in doses of 1·5 cubic centimetres, and six intramuscular injections of "Metrazol" ampoules (one cubic centimetre) were given within four and a half hours. There was no improvement. Picrotoxin was then given intravenously as follows: two cubic centimetres of 0·3% solution (three milligrammes) at intervals of fifteen minutes. There was definite improvement. Picrotoxin was continued at half-hour intervals for four hours and then given intramuscularly every four minutes. Increasing restlessness was noted, the blood pressure and the temperature rose and the pulse rate gradually fell. Two litres of 5% glucose saline solution were given intravenously, followed by a retention enema of warm coffee. One cubic centimetre of picrotoxin was continued intravenously every 45 minutes. Picrotoxin was then stopped and caffeine-sodio-benzoate 0·5 gramme given intramuscularly was substituted at half-hour intervals. There was a definite depression followed by improvement when picrotoxin was resumed at hourly intervals. The patient recovered after receiving 135 milligrammes of picrotoxin.

Diasone.

K. H. PFUETZE AND M. M. PYLE (*The Journal of the American Medical Association*, June 3, 1944) describe a severe toxic reaction following the use of diasone (disodium formaldehyde sulphoxylate derivative of diaminodiphenylsulphone) in the treatment of tuberculosis. A woman, aged nineteen years, suffering from advanced pulmonary tuberculosis, was treated with 1·0 to 1·5 grammes of diasone daily for 22 days, until a total dose of 28 grammes had been given. On the twenty-first day of administration she had a chill and temperature of 102° F., her throat felt sore and she developed a bright red blotchy, maculo-papular eruption on the chest, which spread later over body, legs, arms and face. Her throat was so sore that she could not swallow. Nausea, vomiting and headache occurred. The eruption became vesicular and general exfoliation occurred. Leucocytes numbered 19,000 per cubic millimetre and 8·2% of them were polymorphonuclear cells. Calamine lotion and sedatives were used and fluids were given intravenously including 500 cubic centimetres of citrated blood. The patient recovered. No other patient among 63 treated developed any serious toxic state. The value of the drug in treatment has not yet been determined.

NEUROLOGY AND PSYCHIATRY.

Enuresis in the Navy.

IN the opinion of Alexander Levine (*The American Journal of Psychiatry*, November, 1943), enuresis is, as a rule, of purely psychogenic origin. The percentage of anatomical anomalies is small. The author discovered a large number of naval recruits to be suffering from enuresis. He studied 150 of such cases. In his opinion enuresis is not a clinical entity, but may be the chief manifestation of a deep-seated personality disorder. It is frequently associated with such other neurotic symptomatology as night-terrors, somnambulism, nail-biting and general nervousness in childhood. The bed-wetter, he considers, is usually an emotionally immature, maladjusted and

insecure person. He stresses the insecurity element and believes it to be the commonest ætiological factor in enuresis, permitting the persistence of infantile traits beyond puberty. Heredity studies reveal a number of psychiatric abnormalities in the family. Enuresis, due to feelings of insecurity, occurs often in large families, in disrupted homes, when the economic and social conditions are poor and when the parents are neurotic.

Immediate and Follow-up Results of Electric Shock Therapy.

ACCORDING to Lauren H. Smith, Donald W. Hastings and Joseph Hughes (*The American Journal of Psychiatry*, November, 1943), of the 279 patients who received electric shock treatment, the best results were obtained in the case of those suffering from involutional melancholia and manic-depressive psychosis. Patients were given electric shock treatment every other day. The average number of treatments given to each patient was between nine and ten. The authors state that the manic patients do not hold their recovery as well as those suffering from agitated depression. They believe electric shock therapy is of little value for schizophrenic patients and of doubtful value for psychoneurotic patients. There is no evidence, in their view, that electric shock therapy prevents any future psychotic attacks or that it interferes with any tendency to spontaneous recovery. They hold that skeletal injuries are decreased by the intravenous use of "Intocostrin" (Squibb). Memory changes which occur during treatment do not seem to be permanent.

Malaria in Neurosyphilis during Twenty Years.

A REVIEW of the past twenty years' work on the therapeutic effect of malaria is presented by J. Ernest Nicole (*The Journal of Mental Science*, July-October, 1943). This survey covers 604 patients, of whom over 90% were true general paralytics. The author concludes that the use of malaria alone gives very fair results, but that the addition of certain antispecific drugs leads to an improved recovery rate. In his opinion, tryparsamide is the most suitable drug; but others have given results nearly comparable to those of tryparsamide. In acute and advanced cases patients can make good recoveries; and the author recommends the giving of a second or even third application of malaria when indicated. Serological cures can be expected. Mental recovery depends upon the stage of the disease at which treatment is given. Malaria cannot do more than deal with the syphilitic infection and should not be expected to affect the results of structural injury. The author estimates that malaria combined with drug therapy brings about satisfactory results in at least 50% of cases.

A Psychometric Study of Senility.

H. HALSTEAD (*The Journal of Mental Science*, July-October, 1943) has investigated a number of senile persons in a search for a battery of psychometric tests for senescence. The age of patients tested ranged between sixty-eight and eighty-three years; and the group consisted of one professional, one skilled, six semi-skilled and twelve unskilled workers. An elaborate description of the tests is given, together with the results obtained. It was found that the greatest difficulties were encountered in tests which required a breaking away from old mental habits and adaptations to unfamiliar situations. As would be expected, difficulties arose over tests involving recent memory, judgement, planning and reasoning. Rote memory, fluency of associations, simple arithmetic and vocabulary were less difficult. Performance generally was less affected in tests of visual recognition, old mental habits and simple motor tests. It was found that perseveration is greatly increased in senescence. Impairment of memory and concentration demand that the tests be as short as possible. The average mental age of the patients tested was found to be between ten and eleven years. Individual variability of response to tests increases with the age.

Myotonic Dystrophy.

B. B. MONGILLO AND MAX SEROG (*The Journal of Nervous and Mental Disease*, June, 1944), having reviewed the relevant literature, present the history of a patient suffering from myotonic dystrophy whom they had observed and examined for over a year. The patient displayed the characteristic combination of atrophy, paresis and myotonia, the typical pattern of muscle involvement, baldness, cataract, testicular atrophy and impotence. Blood chemistry was normal except for a somewhat increased cholesterol content. Basal metabolism was slightly diminished. The writers believe that myotonic symptoms sometimes precede a paresis; myotonic dystrophy is a generalized degenerative disease with irreversible degenerative symptoms. There are, however, also symptoms indicating a reversible disturbance in the neuromuscular system. There appeared to be a strong element of polyglandular dysfunction associated with this case. Treatment with vitamin *E* and male sex hormone, while not curative, appeared beneficial and useful.

The Relationship of the Concept Formation Test to Drug Addiction and to Intelligence.

THE Vigotsky concept-formation test, used by C. Knight Aldrich (*The Journal of Nervous and Mental Disease*, July, 1944) in an attempt to achieve a better understanding of the personality of the drug addict, was modified from the original test of Ach. It purports to measure the ability to think in concepts—abstract, categorical thinking, as opposed to concrete, situational thinking. The test and its modification are described. It was applied to 53 male addicts of from twenty-one to fifty-seven years of age who had been abstinent for six months or more. Fifty-one male members of from twenty-three to fifty-five years of age of the staff of the institution were tested as controls. The results are tabulated. The patients were diagnosed as having "psychopathic personality" or demonstrated psychopathic tendencies. No essential difference was found between the Vigotsky test scores of controls and post-addicts in groups of equal intelligence; and the author concludes that although the psychopathic personality preserves the primacy of short-term values without being able to persevere in working towards a goal, there is no significant difference in conceptual thinking compared with the normal individual.

Frequency of Convulsive Disorders in Feeble-Minded.

R. W. WAGGONER AND J. G. SHEPS (*The American Journal of Psychiatry*, January, 1944) have endeavoured to examine the relationship between epilepsy and mental disorder. They divide mental defectives into two groups: (*a*) congenital or endogenous, and (*b*) acquired or exogenous. In the former type the changes are commonly expressed in terms of malformation of the brain, presumably caused by hereditary factors; whereas acquired changes may be inflammatory, vascular or traumatic. Convulsive disorders, in the series investigated, showed little variation in each group, and this leads the authors to the conclusion that some factor other than cerebral pathological change alone is operative. They stress the significance of heredity and find a high incidence of convulsive attacks in the near relatives of epileptics—one which is, indeed, six times greater than that of the general population. And they believe that some biological error manifest in earlier generations may be reactivated as a convulsive disorder, following the necessary injury to the nervous system.

Suggestions for a New Therapy in Dementia Præcox.

WHILE subscribing to the belief that "shock" is the therapeutic factor in the successful treatment of *dementia præcox*, Ernst Lowenstein (*The Journal of Nervous and Mental Disease*, June, 1944) contends that convulsions are only a side effect. The most characteristic symptom of the shock is a profound disturbance of blood circulation which, according to the writer, produces a drop in blood pressure. Led by this idea, he proposed a therapy which consists of increasing the amplitude of the oscillations of the blood pressure by inhalation of amyl nitrite followed by the intravenous injection of adrenaline in sugar-saline solution. By the first procedure he suggests reducing the blood pressure to at least 80 millimetres. Then, after ten minutes, he introduces adrenaline until the blood pressure has risen to 200 millimetres. The amyl nitrite is again used. The author quotes no cases or figures relating to this treatment, but believes it is harmless and easy to apply. He suggests that it can be used advantageously in out-patient clinics.

The Neurological Complications of Hæmophilia.

LESIONS of the nervous system are, according to P. M. Aggeler and S. P. Lucia (*The Journal of Nervous and Mental Disease*, May, 1944), among the more unusual complications of hæmophilia. These authors collate and review such complications in the literature and add three new cases: one in which there was a spontaneous cerebral hæmorrhage, chronic arachnoiditis from previous subdural and subarachnoid hæmorrhage; another which caused a paralysis of the left femoral nerve; and a third which caused paralysis of the femoral nerve and massive hæmophilic pseudotumour of the left ilium.

British Medical Association News.

SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on April 27, 1944, at the Robert H. Todd Assembly Hall, British Medical Association House, 135 Macquarie Street, Sydney, DR. G. C. WILLCOCKS, the President, in the chair.

Insomnia.

DR. LAURENCE HUGHES read a paper entitled "Insomnia" (see page 330).

DR. S. EVAN JONES read a paper entitled "Insomnia" (see page 332).

DR. A. T. EDWARDS expressed his appreciation of the papers; he said that he had been interested in the subject from the psychiatric point of view. Dr. Hughes had spoken of tea as being an excitant, and his remarks about it as a "nightcap" had been rather derogatory. Dr. Edwards said that most of his female friends considered tea a "soother"—something to help them to sleep, rather than the reverse. Dr. Edwards asked Dr. Hughes whether tea really was an excitant, even though it did contain caffeine. Dr. Edwards had been interested in Dr. Evan Jones's statement that psychological sleep was a way of escape; Dr. Edwards agreed with the view, and considered that everybody felt the same, some people even consciously. Some patients half realized it; they said that it was not the lack of sleep that worried them, but lying awake. They got enough sleep to have physiological rest, but not enough for psychological escape, which was necessary. Dr. Edwards supported Dr. Evan Jones's statement concerning the efficiency of shock therapy in insomnia associated with manic-depressive psychoses; he said that in few cases were more than two treatments necessary before the patient was able to do without sedatives. In the great majority of depressive cases shock therapy lessened the duration of the psychosis, and in other cases it minimized to a great extent the actual effects of the psychosis—the terrible depression and emotional upset. These were improved long before the delusional part of the psychosis disappeared. Referring to the mechanism of sleep, Dr. Edwards suggested one point that he said was in keeping with the fact that in the brain most of the cerebral mechanisms were positive rather than negative—that there was a waking mechanism rather than any sleep centre, and that sleep was actually due to inhibition of the waking centre.

DR. F. A. E. LAWES said that he had been reminded by the learned remarks of Dr. Evan Jones of the man pictured in *Punch*, who said that he would not mind suffering from insomnia if he could only get a little sleep. Dr. Lawes agreed with Dr. Hughes that the bold and intelligent use of narcotics was necessary in insomnia; it was important to know how to use them well. Once the vicious cycle was broken, the patient could be reassured as to the harmlessness of the drugs when taken under supervision, and the absence of danger of addiction. Referring to Dr. Evan Jones's statement that no actual bodily harm resulted from insomnia, Dr. Lawes said that that might be so, but an organ neurosis might develop, and when the insomnia was cured, this neurosis disappeared. He considered that people differed in the amount of sleep which they required; very few of those present, for example, could do with the small amount that satisfied Edison. A longer period of sleep was needed to abolish mental fatigue than physical fatigue; they could all remember how quickly as students they had recovered from the fatigue brought about by football, and how much longer they had required for recovery from the fatigue brought about by studying for examinations. The question of rest was important; doctors did not explain to their patients how to rest, how to relax. If they could explain this, the patients would learn to sleep very much better.

DR. B. T. SHALLARD, referring to the mechanism of sleep, which had been stated to be a condition of inhibition, said that a recent annotation in *The Lancet* had suggested that Pavlov's whole theory might be in question; no one had ever confirmed it, and Pavlov himself had not been positive about it.

Dr. Hughes, in reply to Dr. Edwards's question concerning tea, said that he did not know that there would be sufficient caffeine in a cup of tea at bed-time to interfere with sleep; the effect depended largely on how much tea had been taken during the day. Patients actually slept better if tea at bed-time was cut out. Dr. Lawes had referred to the necessity for relaxation. Dr. Hughes said that it was quite a difficult proposition simply to advise a patient to rest and relax at the same time. The advice was not very easy to follow. Dr. Hughes quite agreed with the point Dr. Shallard had raised about Pavlov's experiments; he had simply mentioned Pavlov's theory as one of those put forward on the subject of sleep.

Dr. Evan Jones said that Dr. Lawes had apparently assumed that he was more antagonistic to the use of hypnotics than was really the case. Such drugs were extremely convenient, and they had often to be used, certainly if there were physical indications, and even sometimes when the indications were purely nervous. But it was wrong to use drugs alone and to ignore psychotherapy; this had an important place in the treatment of insomnia. Dr. Evan Jones said that he had read somewhere an argument against Pavlov's theory that the mechanism of sleep was a conditioned inhibition; the argument was that infants could sleep before they were in any way "conditioned", and therefore sleep was not a conditioned inhibition. With regard to the experiments on sleep induced in animals, Dr. Evan Jones held that the condition was not one of true sleep, but rather a kind of hypnosis.

Dr. Willcocks, from the chair, on behalf of the members of the Branch, thanked the speakers for their papers. He said that those present had heard the experiences of men of wide outlook and a long period of training, and their views were of great import. The trouble was to be able to absorb so much information in one evening. Referring to Dr. Hughes's remarks on hypnotics, Dr. Willcocks said that all medical men went through phases; he, too, had gone back to chloral again, because phenobarbital in the dosage commonly given (0·5 grain three times a day) was the most depressing of drugs. Dr. Willcocks had reached the conclusion that it was more depressing than the bromides, and they were more depressing than chloral.

NOTICE.

THE General Secretary of the Federal Council of the British Medical Association in Australia has announced that the following medical practitioners have been released from full-time duty with His Majesty's Forces and have resumed civil practice as from the dates mentioned:

Dr. H. C. Murphy, Ayr, North Queensland (August 17, 1944).
Dr. L. H. Foote, Vulture Street, South Brisbane (May 5, 1944).
Dr. A. C. Ward, South Brisbane (March 13, 1944).
Dr. M. G. Wilson, Toowoomba, Queensland (June 5, 1944).
Dr. Doris A. Selby, 11, Locksley Street, Killara, New South Wales (July 10, 1944).
Dr. W. W. Ingram, 185, Macquarie Street, Sydney (July 20, 1944).
Dr. W. D. Cunningham, "Locarno", 141, Macquarie Street, Sydney (August 14, 1944).

THE eleventh Sir Richard Stawell Oration will be delivered at the monthly meeting of the Victorian Branch of the British Medical Association to be held on Wednesday, October 4, 1944, at the Royal Australasian College of Surgeons. The orator will be Dr. S. A. Smith, of Sydney, and the title of the oration, "Ten Years".

Post-Graduate Work.

GENERAL REVISION COURSE AT SYDNEY.

THE New South Wales Post-Graduate Committee in Medicine announces that a general revision course will be held in Sydney from Monday, October 9, to Saturday, October 21, 1944, inclusive. The programme for the course is set out below.

Applications to attend the course should be made as soon as possible to the Secretary, New South Wales Post-Graduate Committee in Medicine, 145, Macquarie Street, Sydney,

telephone B 4606. Application should state home address and Sydney address, and should be accompanied by a cheque for the amount of the fee, made payable to the committee.

The fees for the course will be as follows: full course, £10 10s.; mornings and afternoons only, £5 5s.; and one week only, £5 5s. For medical officers of the defence forces, members of the public service and hospital residents, the fees will be half those shown.

A special charge will be made for the dinner, and arrangements for those who wish to attend will be made at registration or during the course.

The supervisor of the course is Dr. William Wood.

MONDAY, OCTOBER 9.

The Stawell Hall, 145, Macquarie Street, Sydney.

Morning.

9 to 10.—Registration.
10 to 10.30.—Address by the Honourable C. A. Kelly, M.L.A., Minister for Public Health. Address by Dr. S. A. Smith, Chairman of the Post-Graduate Committee.
11 to 11.45.—"Psychiatry in General Practice", Lieutenant-Colonel A. Sinclair.
11.45 to 12.30.—"Disabilities of the Knee Joint", Lieutenant-Colonel R. Grahame.

Afternoon.

Programme to be arranged.

TUESDAY, OCTOBER 10.

Saint Vincent's Hospital, Darlinghurst (Students' Lecture Theatre).

Morning.

9.15 to 10.—"The Anæmias", Dr. R. Jeremy.
10 to 10.45.—"Closed Head Injuries", Dr. I. D. Miller.
11.15 to 12.—"Cardio-Vascular Disease from the Clinical Standpoint", Dr. R. J. Taylor.
12 to 12.45.—"Infections of the Hand", by V. J. Kinsella.

Afternoon.

2 to 2.45.—"The Compression Treatment of Burns", Dr. R. J. Speight.
2.45 to 3.30.—"Intestinal Suction and Intubation", Dr. E. G. MacMahon.
4 to 4.45.—"The Place of Occupational Therapy in Rehabilitation", Dr. D. J. Glissan.

Evening: The Stawell Hall, 145, Macquarie Street, Sydney.

7.30 to 8.—Medical films will be shown.
8.—Demonstration of X-ray films: Chest, Dr. H. McGregor Cutler; Bones, Dr. J. G. Edwards; Abdomen, Dr. Paul Tillett.

WEDNESDAY, OCTOBER 11.

Sydney Hospital, Macquarie Street, Sydney (Maitland Lecture Theatre).

Morning.

9.15 to 10.—Demonstration of Fractures of the Upper Limb, Dr. C. Winston and Dr. Noel Corlette.
10 to 10.45.—Demonstration of Fractures of the Shaft of the Femur and Lower Limb, Dr. Lyle Buchanan.
11.15 to 12.—"The Post-Operative Treatment of Abdominal Operations", Dr. A. Aspinall.
12 to 12.45.—"Diseases of the Gall-Bladder", Dr. Howard Bullock.

Afternoon.

2 to 3.—"Fractures of the Hip", Dr. John Hoets.
3 to 3.45.—"Peptic Ulcer", Dr. A. Holmes à Court.
4.15 to 5.—"New Drugs in the Treatment of Thyreotoxicosis", Dr. Harold Ritchie.

THURSDAY, OCTOBER 12.

The Women's Hospital, Crown Street, Surry Hills (Lecture Theatre).

Morning.

9.15 to 10.—"Normal Labour", Dr. F. A. Bellingham.
10 to 10.45.—"The Use and Abuse of Female Hormones", Dr. T. Dixon Hughes.
11.15 to 12.—"The Role of Blood Transfusion in Obstetrics", Dr. Ruth Heighway.
12 to 12.45.—"Indications for Forceps", Dr. R. B. C. Stevenson.

Afternoon.

2 to 2.45.—"Toxæmias of Pregnancy", Dr. H. A. McCredie.
2.45 to 3.30.—"Trial Labour", Dr. R. McDougall Bowman.
4 to 4.45.—"Puerperal Sepsis", Dr. J. Chesterman.

Evening: The Robert H. Todd Assembly Hall, 135, Macquarie Street, Sydney.

8.30.—Extraordinary Meeting of the British Medical Association. Subject: "Sterility."

FRIDAY, OCTOBER 13.

The Royal Prince Alfred Hospital, Camperdown (A2 Lecture Theatre).

Morning.

9.15 to 10.—"The Value of the Electrocardiograph in General Practice", Dr. J. Halliday.
10 to 10.45.—"Common Urological Problems", Dr. M. Earlam.
11.15 to 12.—"Common Nervous Diseases", Dr. E. Susman.
12 to 12.45.—"Ear, Nose and Throat Problems of General Practice", Dr. G. Halliday.

Afternoon: At the King George V Memorial Hospital.

2 to 5.—"Gynæcology in General Practice", Dr. H. H. Schlink and members of the honorary gynæcological staff of the hospital.

SATURDAY, OCTOBER 14.

Broughton Hall Psychiatric Clinic, Wharf Road, Leichhardt (Leave Leichhardt Tram at Glover Street).

Morning: Recreation Hall.

9.30 to 11.—Demonstration of Early Nervous and Mental Disorders, Dr. S. Evan Jones and staff.

MONDAY, OCTOBER 16.

The Royal Hospital for Women, Glenmore Road and Oxford Streets, Paddington (Lecture Room, Second Floor).

Morning.

9.15 to 10.—"Induction of Labour", Dr. Ida Saunders.
10 to 10.45.—"Ante-Natal Care", Dr. H. A. Ridler.
11.15 to 12.—"Ante-Partum Hæmorrhage", Dr. Bruce Hittman.
12 to 12.45.—"The Rh Factor in Obstetrics", Professor Bruce Mayes.

Afternoon.

2 to 2.45.—"The Care and Feeding of the Premature Child", Dr. Kathleen Winning.
2.45 to 3.30.—"Breech Presentations", Dr. Gordon Lowe.
4 to 4.45.—"X-Rays in Obstetrics", Dr. E. Frecker.

TUESDAY, OCTOBER 17.

Lewisham Hospital, Lewisham (Out-Patients' Department).

Morning.

9.15 to 10.—Demonstration of Dermatological Cases, Dr. J. Witton Flynn.
10 to 10.45.—"Differential Diagnosis of Vascular States", Dr. C. G. Macdonald.
11.15 to 12.—"Complications of Anæsthesia", Dr. H. J. Daly.
12 to 12.45.—Demonstration of Eye Cases, Dr. E. A. Brearley.

Afternoon.

2 to 4.—Demonstration of Clinical Cases, members of the honorary medical staff.

Evening: The Stawell Hall, 145, Macquarie Street, Sydney.

"Penicillin and the Sulphonamides", Dr. H. R. G. Poate, Dr. Allan S. Walker and Professor H. K. Ward.

WEDNESDAY, OCTOBER 18.

Royal North Shore Hospital, St. Leonards (Nurses' Lecture Theatre).

Morning.

9.15 to 10.—"The Early Signs and Symptoms of Intracranial Tumour", Dr. R. A. Money.
10 to 10.45.—"The Modern Treatment of Carcinoma of the Prostate", Dr. C. Edwards.
11.15 to 12.—"The Management of Diabetes", Dr. W. Wilson Ingram.
12 to 12.45.—"Foot Disabilities", Dr. A. R. Hamilton.

Afternoon: Out-Patients' Department.

2 to 3.—Demonstration: "Allergy", Dr. Bernard Riley.
3 to 4.30.—Demonstration of Chest Cases, Dr. Bruce White, Dr. M. P. Susman and Dr. C. G. Bayliss.

THURSDAY, OCTOBER 19.

The Prince Henry Hospital, Little Bay.

Morning.

9.30 to 10.30.—"Diagnosis of Tropical Diseases likely to be met with in Returned Soldiers", Dr. E. B. Jones.
11.30 to 12.45.—Demonstration of Infectious Diseases (in Nurses' Lecture Theatre and in Wards), Dr. N. J. Symington.

Afternoon.

2 to 4.—Ward Demonstration of Medical Cases, Dr. S. A. Smith.

Evening: Saint Vincent's Hospital, Darlinghurst.

8.—Clinical evening arranged by the British Medical Association.

FRIDAY, OCTOBER 20.

The Royal Alexandra Hospital for Children, Camperdown (Students' Lecture Theatre).

Morning.

9 to 10.—Demonstration of Removal of Tonsils in Children.
10 to 10.45.—"X-Rays in Children", Dr. H. R. Sear.
11.15 to 12.—"Immunization", Dr. D. Vickery.
12 to 12.45.—Demonstration of Medical Cases, Dr. Laurence H. Hughes.

Afternoon.

2 to 3.30.—Demonstration of Surgical Cases, Dr. H. G. Humphries and Dr. T. Y. Nelson.
4 to 4.45.—Pathological Demonstration, Dr. D. Reye.

Evening: At a Place to be Announced.

Course Dinner.

SATURDAY, OCTOBER 21.

Sydney Hospital, Macquarie Street, Sydney (Library of the Kanematsu Institute).

Morning.

9.30 to 11.30.—Demonstration of Blood and Serum Transfusion, Major R. J. Walsh.

Correspondence.

MEDICINE AND SOCIOLOGY.

SIR: Pressure of work is my apology for not having replied to Dr. Dark's letter of August 5, 1944. I quite agree with Dr. Dark that no economic system based on justice has yet emerged in history, but I defy anyone to prove that socialism is based on justice, however well meaning and sincere its advocates may be. Justice is based on natural rights—that is, the right inherent in labour that the labourer shall absolutely own the product of his labour, that every man shall be free to choose his own way in life, and that the revenue that can justly be claimed by a government is a communally created one—economic rent—the only communally created fund. Socialism denies the theory of natural rights, and asserts that all rights are derived from the State. Can this be justice?

Now the instances that Dr. Dark states as evidence of the failure of capitalism are:

1. The failure of Stockton-on-Tees experiment in housing.

2. The destruction of food products, coffee, maize *et cetera*. The curious thing about these very occurrences is that they were due to government interference with the free enterprise of men—that is, they were due to the application, partial it must be confessed, of socialism or semi-socialistic procedures, not to the failure of capitalism.

At the risk of encroaching on your space, I must briefly explain for the benefit of your readers the failure of housing on Stockton-on-Tees. In 1927 an unhealthy area at Stockton-on-Tees was demolished, and 710 inhabitants were removed (forcibly) to an area where the municipal authorities had built modern houses—the crude death rate in the unhealthy slum area was 18·75 in 1923-1927. It rose in the modern hygenic area to 26·71 by 1928-1932. Over the same period the crude death rate in another unhealthy slum area in the same municipality dropped from 26·16 to 20·45.

Dr. McGonigle made a careful inquiry as to the cause of this seemingly extraordinary state of affairs, and his conclusions were that the increased rentals in the modern area were largely responsible—the weekly rentals in the slum area had been 4s. 8d. and 4s. 10d. But in the modern area the rentals had risen to 8s. 10d. per week. Dr. McGonigle stated: "It has been shown that the increased death rate is definitely correlated with a diminishing expenditure on food consequent on the increase in rents" (*Proceedings of the Royal Society of Medicine*, April, 1933). We have here a striking example of the failure of socialistic planning. No one, of course, claims this as complete socialism, but it is an example of the type of action that socialists advocate and that they would extend until such was applied universally. We have had a great number of similar actions in Australia, resulting in failure and loss of millions of pounds of the tax-payers' money, notably in Queensland—thus impoverishing the people.

The destruction of food referred to by Dr. Dark and the destruction of food and cattle in Russia were also the result of governments endeavouring to force men into channels they did not wish to traverse. In the first case by governments endeavouring to control prices, and in the second case by the communist oligarchy in Russia endeavouring to destroy individualist farming.

With all due deference to Professor Laski and to Dr. Dark, I must again affirm that the former's idea that the State always intervenes on the side of the possesser is erroneous. Such has been true, no doubt, in many cases, but can one say that it is true today in Australia—we have a government representing the so-called workers. Is it intervening on the side of the possessors? In truly democratic countries like Australia, Great Britain, America *et cetera* there is a full franchise and the people elect whatever government they desire. Surely they do not elect governments that are going to intervene on the side of the possessor. I am truly glad that Dr. Dark acknowledges that the defeated faction in Russia was subjected to coercion. The truth is, everybody was subjected to and still is subjected to coercion in that nation. I understand that up to the outbreak of war there were 5,000,000 political prisoners—surely this is not a State founded on justice. I cannot justify the coercion of catholics. After the English revolution such was wrong, of course, but two wrongs don't make a right—there is no coercion now.

Dr. Dark may call the peasants of Russia ignorant. I do not think they were as ignorant as the master class who coerced them. The term "capitalism" is a term invented to describe a system in which capital oppresses the workers—in which there are supposedly two opposing classes. It has succeeded in accomplishing this wrong idea with a large number of people, but it has been shown (in fact, Marx himself showed) that capital had no power to oppress where land was free. There are in fact two elements in society—the land-owners and the landless—but almost everybody, even the landless, is a capitalist, and the correct name for present society, at least in English-speaking countries, is democracy. It may not be perfect democracy—nothing human is or ever will be—but it has contained in its framework the basis of an ever-advancing system that can advance to economic justice.

Socialism is the antithesis of this, for it is founded on the idea of the class war—of forcible expropriation and the collectivization of all private property. It has its roots in Prussia and is essentially Prussianism. It is the idea behind fascism. The means are the same in all forms of socialism. The ends may be different, but ultimately and economically it is the same—namely, slavery.

I would commend to all your readers the very timely address by Dr. Russell in THE MEDICAL JOURNAL OF AUSTRALIA of August 5, 1944. It is applicable to the schemes of planning and controlling so beloved by all brands of socialists. Every medical man in Australia should ponder over its contents before he embraces beliefs in so-called new orders. We can be thankful that a large majority of citizens in this country declared by their vote last Saturday that they do not desire to go to the left and into the darkness from which we have emerged. Our profession ought to see in this vote an indication that the Government has no mandate to socialize medicine.

Yours, etc.,

PAUL G. DANE.

111, Collins Street,
Melbourne, C.1,
August 28, 1944.

SIR: It seems from Dr. Dane's letter of August 28, 1944, that he has formed his opinion of socialism from sources hostile to it. For decades it has been a favourite trick of reactionaries to paint it in false and ugly colours, and then to exclaim: "See what a horrible thing it is!" No socialism that I have ever heard of claims that human rights derive

only from the State; possibly Dr. Dane is thinking of National Socialism, which, of course, is Fascism. Certainly socialism must use the State to secure to each individual his human rights—rights to the best education he can absorb, to work that allows him the free use of his capacities, to leisure for the enjoyment of culture, and of the private possessions that everyone needs for the complete development of his personality. The private property that he must not own is that which would give him power to exploit his fellow-man.

Dr. Dane gives a clear account of the Stockton-on-Tees experiment and its partial failure, but to call it a "failure of socialist planning" is an absurdity; you can't have socialist planning in a capitalist society. At present the only place where it is possible is in the U.S.S.R., where the Germans seem to have found it not a complete failure, despite Mr. Souvarine, Mr. Trotsky, Mr. Lyons, Mr. Eastman, and the others from whom Dr. Dane seems to have got his view of Russia.

Then he attributes many of our economic ills to "government interference with the free enterprise of men". Governments have only interfered when the restrictive activities of monopolies had made conditions impossible. It is broadly true that there is no longer any free enterprise except in a few surviving small-scale industries; can anyone with a few thousand pounds start a steel works to compete with the B.H.P., or a kiln to compete with the Sydney brick combine, or cement works to compete with the cement ring?

It is strange to find Dr. Dane as a champion of capitalism, or, as he calls it, democracy, or, as it could more accurately still be called, capitalist-democracy; whatever the name, the pre-war economic system had ceased to function properly; having developed a productive power that could have supplied every English citizen with all that he needed, it had failed to get the goods to the people. For Sir John Boyd Orr found that twenty-two and a half million people were suffering from lack of food in England just before this war.

There are very many other points I would like to take up with Dr. Dane, but the Editor, unfortunately, will not turn over a whole number of the journal to me, so one more must suffice. English socialism has not got its roots in Prussia; its roots go back to "Piers Plowman", and John Wycliffe, and John Ball, and draw their nourishment from a deep feeling for social justice. Various aspects of the socialist ideal keep cropping out in English history; the first "political commissars" were the "agitators" of Cromwell's army, whose duty it was to instruct the soldiers, because "men fight best when they know what they fight for, and love it". The first collective farmers were Winstanley's "Diggers". Then, in the beginning of the Industrial Revolution, there were Owen and Morris and Ruskin; and we have the delightful incident of a Russian Czar asking that English socialists should be kept from stirring up trouble among his starving workmen.

I know it doesn't matter where socialism comes from, but prejudice is aroused by that unworthy propaganda trick of decrying it as "un-English"; so the truth must be clearly stated that socialism is as English as the long-bow.

Yours, etc.,

E. P. DARK.

Katoomba,
New South Wales,
September 16, 1944.

[This correspondence is now closed.—EDITOR.]

IRRITATION PRODUCED BY THE PROCESSION CATERPILLAR.

SIR: I am grateful to Dr. S. F. McDonald for his letter containing references to Fabre's work on "The Life of the Caterpillar", which I vainly sought prior to publication of my article on the procession caterpillar. I have read some of Fabre's exceedingly interesting observations—a model of patient observation and experimental work for all entomologists—but did not come across the article referred to. However, such references in medical literature appear to be rare.

Yours, etc.,

H. FLECKER.

52, Abbott Street,
Cairns,
North Queensland.
September 6, 1944.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Numbers 173 and 179, of August 31 and September 7, 1944.

NAVAL FORCES OF THE COMMONWEALTH.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Appointment.—Surgeon Lieutenant (for Short Service) Trevor Alexander McLean is appointed Surgeon Lieutenant on the Permanent List, with seniority in rank of 7th March, 1939, dated 7th September, 1944.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Promotion.—Acting Lieutenant Surgeon Commander Philip Neville Simons is promoted to the rank of Surgeon Lieutenant-Commander, dated 1st July, 1944.

ROYAL AUSTRALIAN AIR FORCE.

Permanent Air Force: Medical Branch.

Temporary Wing Commander W. L. B. Stephens (1175) is granted the acting rank of Group Captain whilst occupying a Group Captain post with effect from 3rd July, 1944.

Citizen Air Force: Medical Branch.

The following Temporary Wing Commanders are granted the acting rank of Group Captain whilst occupying Group Captain posts with effect from the dates indicated: R. I. Greenham (291188), 1st June, 1944, M. L. Creightmore (291210), 4th July, 1944.

Temporary Flight Lieutenant R. G. Weaver (261460) is granted the acting rank of Squadron Leader whilst occupying a Squadron Leader post with effect from 1st July, 1944.

The following Flight Lieutenants are transferred from the Reserve to the Active List with effect from the dates indicated: J. E. Carroll (267573), S. G. Barr (267515), W. T. Lesslie (267619), H. Seamonds (267692), A. J. Tonakie (277429), B. S. Skerman (277459), C. R. Dines (277458), B. N. Ostberg (257582), 9th July, 1944, L. H. S. Robbins (277463), 10th July, 1944.

The following medical practitioners are appointed to commissions on probation with the rank of Flight Lieutenant with effect from 9th July, 1944: J. M. Harris, M.B., B.S. (267729), L. A. Langley, M.B., B.S. (257688), N. J. Michael, M.B., B.S. (267728).

Reserve: Medical Branch.

Doctor C. M. McMahon, M.B., B.S. (277513), is appointed to a commission on probation with the rank of Flight Lieutenant with effect from 1st July, 1944.—(Ex. Min. No. 234—Approved 1st September, 1944.)

Medical Prizes.

THE STAWELL MEMORIAL PRIZE.

CANDIDATES who intend to submit essays for the Stawell Memorial Prize are reminded that the closing date is November 30, 1944. The subject of the essay is "The Influence of Diet in Health and Disease", and the amount of the prize is £30. Essays should be delivered to the Medical Secretary, British Medical Association (Victorian Branch), 426, Albert Street, East Melbourne, C.2, by 4 p.m. on the closing date. Detailed conditions were published in THE MEDICAL JOURNAL OF AUSTRALIA of March 18, 1944.

Obituary.

JAMES BLAIR DONALDSON.

WE regret to announce the death of Dr. James Blair Donaldson, which occurred on September 7, 1944, at Melbourne.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Quinn, William Matthew James, M.B., B.S., 1941 (Univ. Sydney), 2/6th Australian Infantry Battalion, Australia.

Laidlaw, Christopher William Francis, M.B., B.S., 1944 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

The undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Basil-Jones, Margaret Walker, M.B., B.S., 1939 (Univ. Sydney), 4, "Stradbroke", Gladswood Gardens, Double Bay.

Bowen, Janet Mora Campbell, M.B., B.S., 1942 (Univ. Sydney), Captain J. M. C. Bowen, 113th Australian General Hospital, Concord.

Broadfoot, James, M.B., B.S., 1943 (Univ. Sydney), 1, Chelmsford Avenue, Lindfield.

Cameron, Barry Wallace Graham, M.B., B.S., 1944 (Univ. Sydney), Mater Misericordiæ Hospital, North Sydney.

Church, Louis Vivian, M.B., B.S., 1941 (Univ. Sydney), NX77358, Captain L. V. Church, c.o. D.D.M.S., H.Q., New Guinea Force.

Couani, John M.B., B.S., 1943 (Univ. Sydney), Prince Henry Hospital, Little Bay.

Cullen, John Thomas, M.B., B.S., 1942 (Univ. Sydney), "Wilton", Maud Street, Randwick.

Cumming, Geoffrey Gilmore, M.B., B.S., 1943 (Univ. Sydney), 7, Moore Street, Liverpool.

Dickinson, Dorothy Claire, M.B., B.S., 1944 (Univ. Sydney), Hornsby and District Hospital, Hornsby.

Fowles, Winifred Lambert, M.B., B.S., 1939 (Univ. Sydney), 19, Templeton, 33, Wolseley Road, Point Piper.

Gallagher, John Paul, M.B., B.S., 1942 (Univ. Sydney), 52, Minna Street, Burwood.

Gordon, Alwyce Betty, M.B., B.S., 1944 (Univ. Sydney), Royal North Shore Hospital, St. Leonards.

Hatfield, Samuel Bolam, M.B., B.S., 1939 (Univ. Sydney), 11, Roscoe Street, Bondi Beach.

Hing, Norman Sidney, M.B., B.S., 1942 (Univ. Sydney), 109, Penshurst Street, Willoughby.

Kelly, James Lincoln, M.B., B.S., 1944 (Univ. Sydney), 1, Greenknowe Avenue, Potts Point.

Lundie, Arthur James, M.B., B.S., 1941 (Univ. Sydney), 15, Lord Street, Roseville.

Mendelsohn, Branam Coleman, M.B., B.S., 1944 (Univ. Sydney), Base Hospital, Orange.

Middleton, Lucas William Maxton, M.B., B.S., 1942 (Univ. Sydney), c.o. Dr. C. D. Garnsey, 30, Turramurra Avenue, Turramurra.

Palmer, Alice Jean, M.B., B.S., 1943 (Univ. Sydney), 8, Goodwin Avenue, Ashfield.

Player, Sydney James William, M.B., B.S., 1944 (Univ. Sydney), 1, Archbold Road, Roseville.

Puleston-Jones, Eluned Myfanwy, M.R.C.S. (England), L.R.C.P. (London), 1931, The Astor, 123 Macquarie Street, Sydney.

Slattery, Edward Matthew, M.B., B.S., 1944 (Univ. Sydney), Lismore Base Hospital, Lismore.

Smith, Sidney Ernest, M.B., B.S., 1940 (Univ. Sydney), Main Northern Road, Castle Hill.

Stapleton, Joseph Edward, M.B., B.S., 1944 (Univ. Sydney), Flat 10, 124, Old South Head Road, Bellevue Hill.

The undermentioned has applied for election as a member of the Western Australian Branch of the British Medical Association:

McCann, Francis Bede, M.B., Ch.M., 1922 (Univ. Sydney), Commonwealth Health Department, Perth.

Medical Appointments.

Dr. Godfrey Moses Harris has been appointed Government Medical Officer at Mudgee, New South Wales.

Sir Charles Bickerton Blackburn and Professor Hugh Kingsley Ward, in pursuance of Section 6 of *The Prince Henry Hospital Act*, 1936, of New South Wales, have been appointed Directors on the Board of the Prince Henry Hospital for a period of three years.

Diary for the Month.

SEPT. 25.—Meeting of the Federal Council, B.M.A., Melbourne.
SEPT. 26.—New South Wales Branch, B.M.A.: Ethics Committee.
SEPT. 27.—Victorian Branch, B.M.A.: Council Meeting.
SEPT. 28.—South Australian Branch, B.M.A.: Scientific Meeting.
SEPT. 28.—New South Wales Branch, B.M.A.: Branch Meeting.
OCT. 3.—New South Wales Branch, B.M.A.: Council Quarterly.
OCT. 4.—Western Australian Branch, B.M.A.: Council Meeting.
OCT. 4.—Victorian Branch, B.M.A.: Branch Meeting.
OCT. 5.—South Australian Branch, B.M.A.: Council Meeting.
OCT. 6.—Queensland Branch, B.M.A.: Branch Meeting.
OCT. 6.—Victorian Branch, B.M.A.: Legislative Subcommittee.
OCT. 10.—Tasmanian Branch, B.M.A.: Branch Meeting.
OCT. 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
OCT. 10.—New South Wales Branch, B.M.A.: Organization and Science Committee.
OCT. 13.—Queensland Branch, B.M.A.: Council Meeting.
OCT. 13.—Victorian Branch, B.M.A.: Ethics Subcommittee.
OCT. 16.—Victorian Branch, B.M.A.: Hospital Subcommittee.
OCT. 16.—Victorian Branch, B.M.A.: Finance Subcommittee.
OCT. 17.—New South Wales Branch, B.M.A.: Medical Politics Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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